MSI
MICRO-STAR INTERNATIONAL

# K9AGM2

## MS-7327 (v1.X) Mainboard

G52-73271X6

## Copyright Notice

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## Revision History

| Revision | Revision History | Date |
|---|---|---|
| V1.0 | First release | December 2006 |
| V1.1 | Add RAID appendix | April 2007 |

## Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

- Visit the MSI website for FAQ, technical guide, BIOS updates, driver updates, and other information: ***http://www.msi.com.tw/program/service/faq/faq/esc_faq_list.php***
- Contact our technical staff at: ***http://support.msi.com.tw/***

## Safety Instructions

1. Always read the safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Keep this equipment away from humidity.
4. Lay this equipment on a reliable flat surface before setting it up.
5. The openings on the enclosure are for air convection hence protects the equipment from overheating. DO NOT COVER THE OPENINGS.
6. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
7. Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
8. Always Unplug the Power Cord before inserting any add-on card or module.
9. All cautions and warnings on the equipment should be noted.
10. Never pour any liquid into the opening that could damage or cause electrical shock.
11. If any of the following situations arises, get the equipment checked by a service personnel:
    - † The power cord or plug is damaged.
    - † Liquid has penetrated into the equipment.
    - † The equipment has been exposed to moisture.
    - † The equipment has not work well or you can not get it work according to User's Manual.
    - † The equipment has dropped and damaged.
    - † The equipment has obvious sign of breakage.
12. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE $60^0$C ($140^0$F), IT MAY DAMAGE THE EQUIPMENT.

**CAUTION:** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

警告使用者:
這是甲類的資訊產品，在居住的環境中使用時，可能會造成無線電干擾，在這種情況下，使用者會被要求採取某些適當的對策。

廢電池請回收

For better environmental protection, waste batteries should be collected separately for recycling or special disposal.

## FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the measures listed below.

- † Reorient or relocate the receiving antenna.
- † Increase the separation between the equipment and receiver.
- † Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- † Consult the dealer or an experienced radio/television technician for help.

**Notice 1**

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Notice 2**

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

**Micro-Star International**
**MS-7327**

*This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:*

*(1) this device may not cause harmful interference, and*

*(2) this device must accept any interference received, including interference that may cause undesired operation.*

## WEEE (Waste Electrical and Electronic Equipment) Statement

### ENGLISH

**To protect the global environment and as an environmentalist, MSI must remind you that...**

**Under the European Union ("EU") Directive on Waste Electrical and Electronic Equipment, Directive 2002/96/EC, which takes effect on August 13, 2005, products of "electrical and electronic equipment" cannot be discarded as municipal waste anymore and manufacturers of covered electronic equipment will be obligated to take back such products at the end of their useful life. MSI will comply with the product take back requirements at the end of life of MSI-branded products that are sold into the EU. You can return these products to local collection points.**

### DEUTSCH

**Hinweis von MSI zur Erhaltung und Schutz unserer Umwelt**

**Gemäß der Richtlinie 2002/96/EG über Elektro- und Elektronik-Altgeräte dürfen Elektro- und Elektronik-Altgeräte nicht mehr als kommunale Abfälle entsorgt werden. MSI hat europaweit verschiedene Sammel- und Recyclingunternehmen beauftragt, die in die Europäische Union in Verkehr gebrachten Produkte, am Ende seines Lebenszyklus zurückzunehmen. Bitte entsorgen Sie dieses Produkt zum gegebenen Zeitpunkt ausschliesslich an einer lokalen Altgerätesammelstelle in Ihrer Nähe.**

### FRANÇAIS

**En tant qu'écologiste et afin de protéger l'environnement, MSI tient à rappeler ceci...**

**Au sujet de la directive européenne (EU) relative aux déchets des équipement électriques et électroniques, directive 2002/96/EC, prenant effet le 13 août 2005, que les produits électriques et électroniques ne peuvent être déposés dans les décharges ou tout simplement mis à la poubelle. Les fabricants de ces équipements seront obligés de récupérer certains produits en fin de vie. MSI prendra en compte cette exigence relative au retour des produits en fin de vie au sein de la communauté européenne. Par conséquent vous pouvez retourner localement ces matériels dans les points de collecte.**

### РУССКИЙ

**Компания MSI предпринимает активные действия по защите окружающей среды, поэтому напоминаем вам, что....**

**В соответствии с директивой Европейского Союза (ЕС) по предотвращению загрязнения окружающей среды использованным электрическим и электронным оборудованием (директива WEEE 2002/96/EC), вступающей в силу 13 августа 2005 года, изделия, относящиеся к электрическому и электронному оборудованию, не могут рассматриваться как бытовой мусор, поэтому производители вышеперечисленного электронного оборудования обязаны принимать его для переработки по окончании срока службы. MSI обязуется соблюдать требования по приему продукции, проданной под маркой MSI на территории ЕС, в переработку по окончании срока службы. Вы можете вернуть эти изделия в специализированные пункты приема.**

## ESPAÑOL

**MSI como empresa comprometida con la protección del medio ambiente, recomienda:**
**Bajo la directiva 2002/96/EC de la Unión Europea en materia de desechos y/o equipos electrónicos, con fecha de rigor desde el 13 de agosto de 2005, los productos clasificados como "eléctricos y equipos electrónicos" no pueden ser depositados en los contenedores habituales de su municipio, los fabricantes de equipos electrónicos, están obligados a hacerse cargo de dichos productos al termino de su período de vida. MSI estará comprometido con los términos de recogida de sus productos vendidos en la Unión Europea al final de su periodo de vida. Usted debe depositar estos productos en el punto limpio establecido por el ayuntamiento de su localidad o entregar a una empresa autorizada para la recogida de estos residuos.**

## NEDERLANDS

**Om het milieu te beschermen, wil MSI u eraan herinneren dat....**
**De richtlijn van de Europese Unie (EU) met betrekking tot Vervuiling van Electrische en Electronische producten (2002/96/EC), die op 13 Augustus 2005 in zal gaan kunnen niet meer beschouwd worden als vervuiling.**
**Fabrikanten van dit soort producten worden verplicht om producten retour te nemen aan het eind van hun levenscyclus. MSI zal overeenkomstig de richtlijn handelen voor de producten die de merknaam MSI dragen en verkocht zijn in de EU. Deze goederen kunnen geretourneerd worden op lokale inzamelingspunten.**

## SRPSKI

**Da bi zaštitili prirodnu sredinu, i kao preduzeće koje vodi računa o okolini i prirodnoj sredini, MSI mora da vas podesti da...**
**Po Direktivi Evropske unije ("EU") o odbačenoj ekektronskoj i električnoj opremi, Direktiva 2002/96/EC, koja stupa na snagu od 13. Avgusta 2005, proizvodi koji spadaju pod "elektronsku i električnu opremu" ne mogu više biti odbačeni kao običan otpad i proizvođači ove opreme biće prinuđeni da uzmu natrag ove proizvode na kraju njihovog uobičajenog veka trajanja. MSI će poštovati zahtev o preuzimanju ovakvih proizvoda kojima je istekao vek trajanja, koji imaju MSI oznaku i koji su prodati u EU. Ove proizvode možete vratiti na lokalnim mestima za prikupljanje.**

## POLSKI

**Aby chronić nasze środowisko naturalne oraz jako firma dbająca o ekologię, MSI przypomina, że...**
**Zgodnie z Dyrektywą Unii Europejskiej ("UE") dotyczącą odpadów produktów elektrycznych i elektronicznych (Dyrektywa 2002/96/EC), która wchodzi w życie 13 sierpnia 2005, tzw. "produkty oraz wyposażenie elektryczne i elektroniczne " nie mogą być traktowane jako śmieci komunalne, tak więc producenci tych produktów będą zobowiązani do odbierania ich w momencie gdy produkt jest wycofywany z użycia. MSI wypełni wymagania UE, przyjmując produkty (sprzedawane na terenie Unii Europejskiej) wycofywane z użycia. Produkty MSI będzie można zwracać w wyznaczonych punktach zbiorczych.**

## TÜRKÇE

**Çevreci özelliğiyle bilinen MSI dünyada çevreyi korumak için hatırlatır:**

**Avrupa Birliği (AB) Kararnamesi Elektrik ve Elektronik Malzeme Atığı, 2002/96/EC Kararnamesi altında 13 Ağustos 2005 tarihinden itibaren geçerli olmak üzere, elektrikli ve elektronik malzemeler diğer atıklar gibi çöpe atılamayacak ve bu elektonik cihazların üreticileri, cihazların kullanım süreleri bitttikten sonra ürünleri geri toplamakla yükümlü olacaktır. Avrupa Birliği'ne satılan MSI markalı ürünlerin kullanım süreleri bittiğinde MSI ürünlerin geri alınması isteği ile işbirliği içerisinde olacaktır. Ürünlerinizi yerel toplama noktalarına bırakabilirsiniz.**

## ČESKY

**Záleží nám na ochraně životního prostředí - společnost MSI upozorňuje...**

**Podle směrnice Evropské unie ("EU") o likvidaci elektrických a elektronických výrobků 2002/96/EC platné od 13. srpna 2005 je zakázáno likvidovat "elektrické a elektronické výrobky" v běžném komunálním odpadu a výrobci elektronických výrobků, na které se tato směrnice vztahuje, budou povinni odebírat takové výrobky zpět po skončení jejich životnosti. Společnost MSI splní požadavky na odebírání výrobků značky MSI, prodávaných v zemích EU, po skončení jejich životnosti. Tyto výrobky můžete odevzdat v místních sběrnách.**

## MAGYAR

**Annak érdekében, hogy környezetünket megvédjük, illetve környezetvédőként fellépve az MSI emlékezteti Önt, hogy ...**

**Az Európai Unió („EU") 2005. augusztus 13-án hatályba lépő, az elektromos és elektronikus berendezések hulladékairól szóló 2002/96/EK irányelve szerint az elektromos és elektronikus berendezések többé nem kezelhetőek lakossági hulladékként, és az ilyen elektronikus berendezések gyártói kötelessé válnak az ilyen termékek visszavételére azok hasznos élettartama végén. Az MSI betartja a termékvisszavétellel kapcsolatos követelményeket az MSI márkanév alatt az EU-n belül értékesített termékek esetében, azok élettartamának végén. Az ilyen termékeket a legközelebbi gyűjtőhelyre viheti.**

## ITALIANO

**Per proteggere l'ambiente, MSI, da sempre amica della natura, ti ricorda che....**

**In base alla Direttiva dell'Unione Europea (EU) sullo Smaltimento dei Materiali Elettrici ed Elettronici, Direttiva 2002/96/EC in vigore dal 13 Agosto 2005, prodotti appartenenti alla categoria dei Materiali Elettrici ed Elettronici non possono più essere eliminati come rifiuti municipali: i produttori di detti materiali saranno obbligati a ritirare ogni prodotto alla fine del suo ciclo di vita. MSI si adeguerà a tale Direttiva ritirando tutti i prodotti marchiati MSI che sono stati venduti all'interno dell'Unione Europea alla fine del loro ciclo di vita. È possibile portare i prodotti nel più vicino punto di raccolta.**

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# Chapter 1
# Getting Started

Thank you for choosing the K9AGM2 Series (MS-7327 v1.X) Micro-ATX mainboard. The K9AGM2 Series mainboards are based on **AMD® 690G/690V** & **SB600** chipsets for optimal system efficiency. Designed to fit the advanced **AMD® Athlon 64 X2/ Athlon 64** processor, the K9AGM2 Series deliver a high performance and professional desktop platform solution.

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# Mainboard Specifications

**Processor Support**

- AMD® Athlon64 / Athlon64 X2 AM2 processors in SKT940 package
- Supports 4 pin CPU Fan Pin-Header with Fan Speed Control
- Supports up to 5000+ and higter CPU

(For the latest information about CPU, please visit *http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_cpu_support.php*)

**Supported FSB**

- 1000 MHz

**Chipset**

- North Bridge: AMD® 690G/ 690V chipset
- South Bridge: SB600 chipset

**Memory Support**

- DDRII 800/667/533/400 DRAM (4GB Max)
- 2 DDRII DIMMs (240pin / 1.8V)

(For more information on compatible components, please visit *http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_trp_list.php)*

**LAN** (Optional)

- Supports 10/100 Fast Ethernet by 8101E
- Supports 10/100/1000 Fast Ethernet by 8111B

**1394** (Optional)

- Supports 2 IEEE1394 ports, transfer rate is up to 400Mbps
- Controlled by VIA VT6308 (optional)

**Audio**

- Chip integrated by Realtek® ALC888
- Flexible 8-channel audio with jack sensing
- Compliant with Azalia 1.0 spec

**IDE**

- 1 IDE port by SB600
- Supports Ultra DMA 66/100/133 mode
- Supports PIO, Bus Master operation mode

**SATA**

- Supports four SATA II devices by AMD® SB600
- Supports storage and data transfers at up to 300MB/s

**RAID**

- Supports RAID 0, 1 and 0+1 mode by AMD® SB600

## Floppy

- 1 floppy port
- Supports 1 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes

## Connectors

**Back panel**

- 1 PS/2 mouse port
- 1 PS/2 keyboard port
- 1 HDMI port (optional)
- 1 VGA port
- 1 parallel port supporting SPP/EPP/ECP mode
- 4 USB 2.0 Ports
- 1 LAN jack
- 6 flexible audio jacks
- 1 1394 port (optional)

**On-Board Pinheaders**

- 3 USB 2.0 pinheaders
- 1 1394 pinheader (optional)
- 1 TV-out pinheader (optional)
- 1 Audio pinheader
- 1 CD-in connector
- 1 SPDIF out connector (optional)
- 1 SPDIF in connector (optional)
- 4 Serial ATA ports

## Slots

- 1 PCI Express x16 slot
- 2 PCI slots
- 1 PCI Express x 1 slot

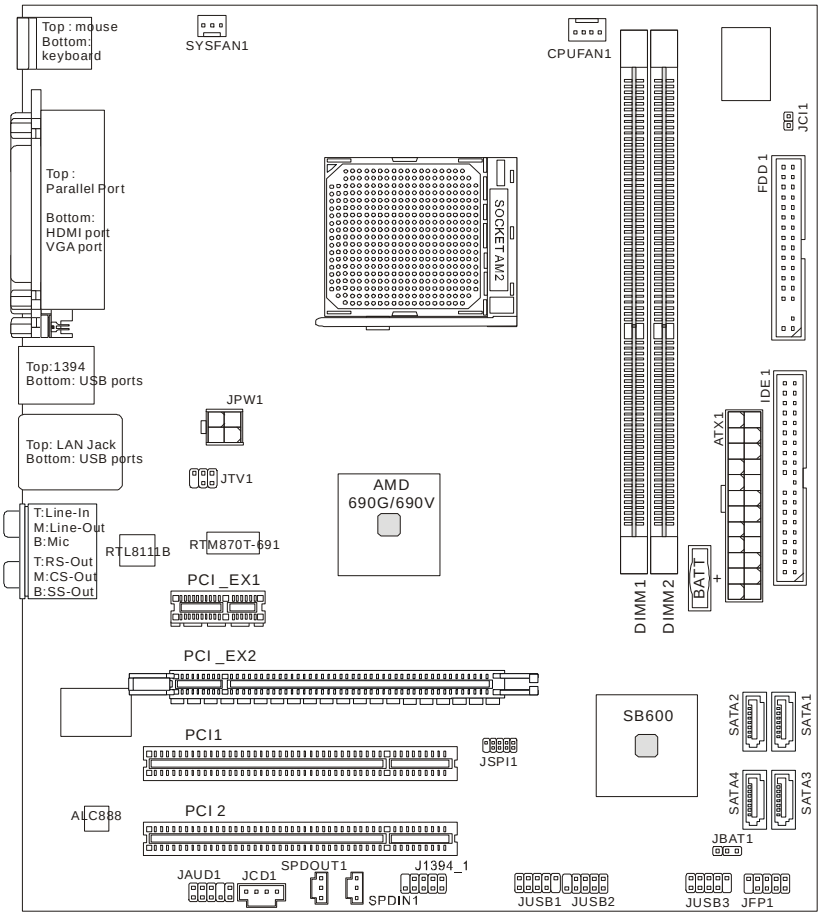
## Form Factor

- Micro-ATX (24.4cm X 21.5 cm)

## Mounting

- 6 mounting holes

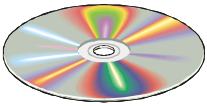
# Mainboard Layout




**K9AGM2 Series**
**(MS-7327 v1.X) Micro- ATX Mainboard**

## Packing Checklist

MSI motherboard

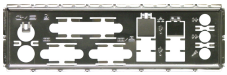


MSI Driver/Utility CD

SATA Cable

Power Cable

Standard Cable for IDE Devices



Back IO Shield

User's Guide

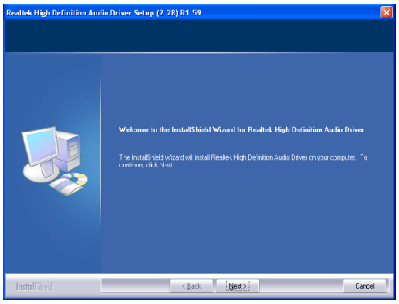
* The pictures are for reference only and may vary from the packing contents of the product you purchased.

# Setup audio output to HDMI port

## Install ATI HDMI Audio Driver

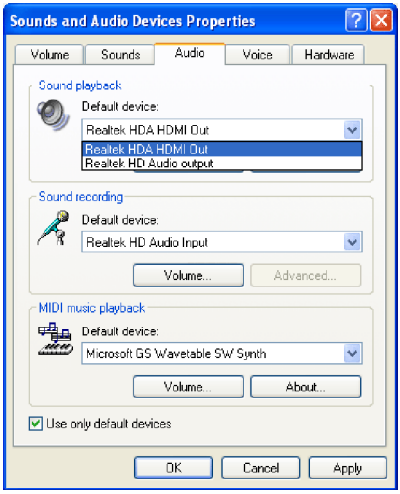
To install the ATI HDMI Audio driver follow these steps

1. Insert the application CD into the CD-ROM drive. The setup screen will automatically appear.
2. Click ATI HDMI Audio Driver.


Realtek High Definition Audio Driver Setup
Welcome to the InstallShield Wizard for Realtek High Definition Audio Driver
The InstallShield Wizard will install Realtek High Definition Audio Driver on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

3. Click Next to install the driver.
4. Restart the computer after the driver installation procedure.

## Setup Sounds and Audio Devices




Go to: Start -> Control Panel -> Sounds and Audio Devices

When the ATI HDMI Audio Driver is correctly installed, there will be one device for the Realtek HDA HDMI Out in Sound playback under Sounds and Audio Devices Properties. Select the item and then click the OK button

# Chapter 2
# Hardware Setup

This chapter provides you with the information about hardware setup procedures. While doing the installation, be careful in holding the components and follow the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

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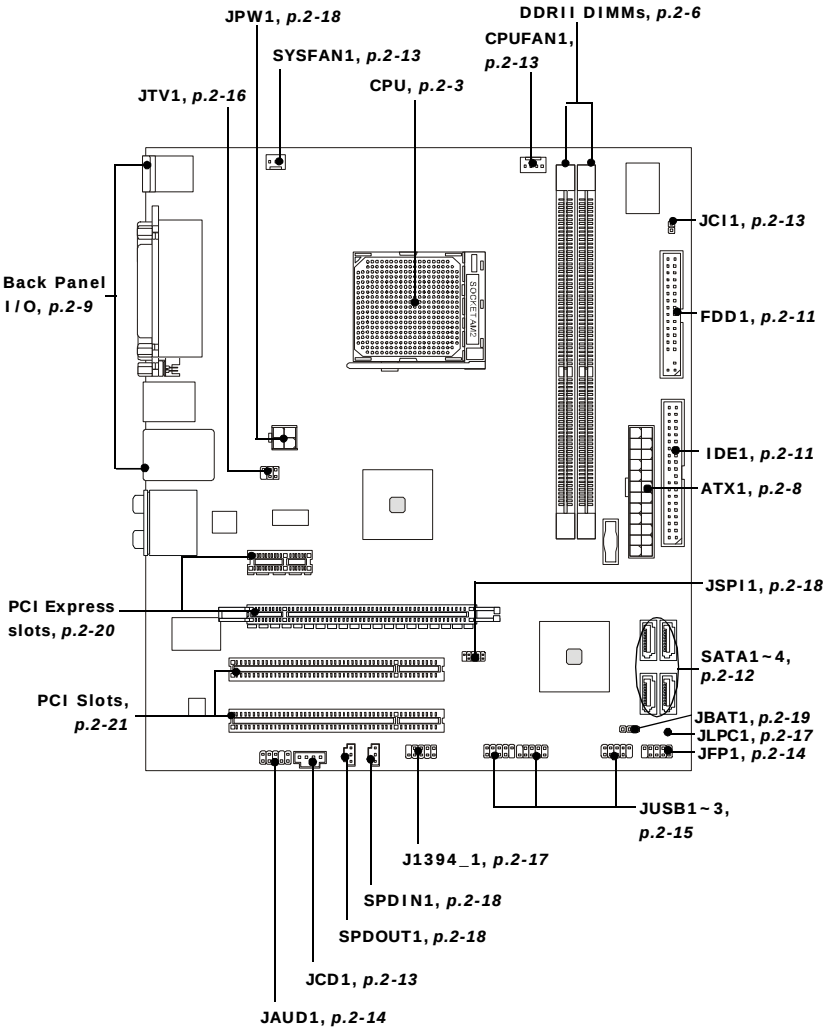
# Quick Components Guide



# CPU (Central Processing Unit)

The mainboard supports AMD® Athlon64 X2/ Athlon64 processors. The mainboard uses a CPU socket called Socket AM2 (940-pin) for easy CPU installation. When you are installing the CPU, **make sure the CPU has a heat sink and a cooling fan attached on the top to prevent overheating.** If you do not have the heat sink and cooling fan, contact your dealer to purchase and install them before turning on the computer.
For the latest information about CPU, please visit http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_cpu_support.php

**Important**

1. *Overheating will seriously damage the CPU and system. Always make sure the cooling fan can work properly to protect the CPU from overheating.*
2. *Make sure that you apply an even layer of heat sink paste (or thermal tape) between the CPU and the heatsink to enhance heat dissipation.*
3. *While replacing the CPU, always turn off the ATX power supply or unplug the power supply's power cord from the grounded outlet first to ensure the safety of CPU.*

## CPU Installation Procedures for Socket AM2

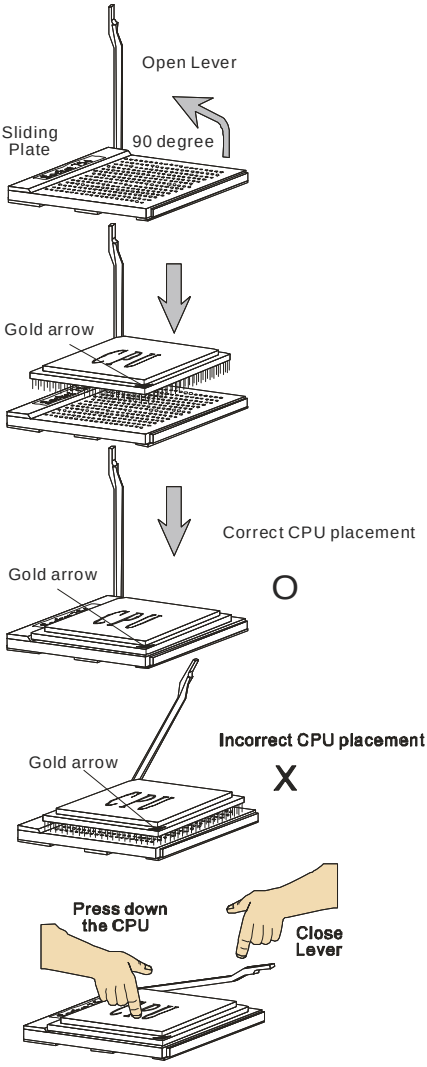
1. Please turn off the power and unplug the power cord before installing the CPU.

2. Pull the lever sideways away from the socket. Make sure to raise the lever up to a 90-degree angle.

3. Look for the gold arrow of the CPU. The gold arrow should point as shown in the picture. The CPU can only fit in the correct orientation.

4. If the CPU is correctly installed, the pins should be completely embedded into the socket and can not be seen. Please note that any violation of the correct installation procedures may cause permanent damages to your mainboard.

5. Press the CPU down firmly into the socket and close the lever. As the CPU is likely to move while the lever is being closed, always close the lever with your fingers pressing tightly on top of the CPU to make sure the CPU is properly and completely embedded into the socket.



## Installing AMD Socket AM2 CPU Cooler Set

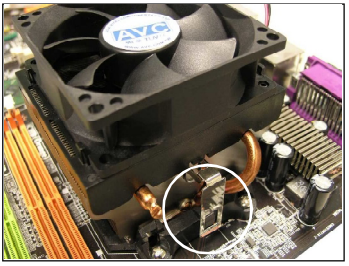
When you are installing the CPU, **make sure the CPU has a heat sink and a cooling fan attached on the top to prevent overheating.** If you do not have the heat sink and cooling fan, contact your dealer to purchase and install them before turning on the computer.

### Important

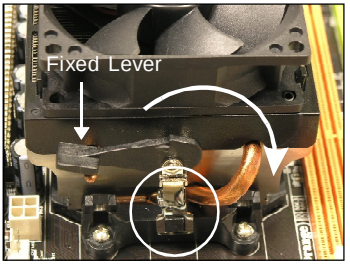
*Mainboard photos shown in this section are for demonstration of the cooler installation for Socket AM2 CPUs only. The appearance of your mainboard may vary depending on the model you purchase.*

1. Position the cooling set onto the retention mechanism.

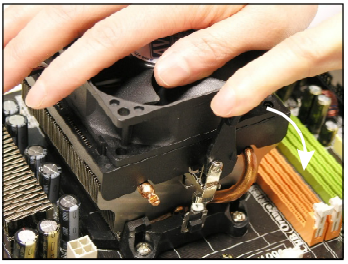
   Hook one end of the clip to hook first.



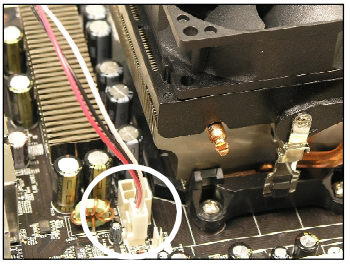
2. Then press down the other end of the clip to fasten the cooling set on the top of the retention mechanism. Locate the Fix Lever and lift up it .




3. Fasten down the lever.



4. Attach the CPU Fan cable to the CPU fan connector on the mainboard.

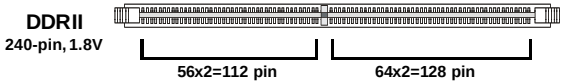


** While disconnecting the Safety Hook from the fixed bolt, it is necessary to keep an eye on your fingers, because once the Safety Hook is disconnected from the fixed bolt, the fixed lever will spring back instantly.*

# Memory

The mainboard provides four 240-pin non-ECC **DDRII** DIMMs and supports up to 4 GB system memory.

For more information on compatible components, please visit *http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_trp_list.php*




## Dual-Channel Memory Population Rules

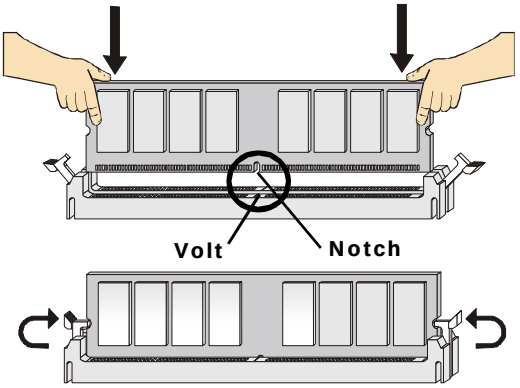
## Installing DDRII Modules

1. The memory module has only one notch on the center and will only fit in the right orientation.
2. Insert the memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the DIMM slot.

**Important**

*You can barely see the golden finger if the memory module is properly inserted in the DIMM slot.*

3. The plastic clip at each side of the DIMM slot will automatically close.



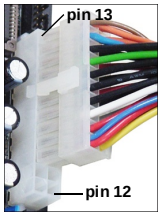

**Important**

- *DDRII modules are not interchangeable with DDR and the DDRII standard is not backwards compatible. You should always install DDRII memory modules in the DDRII DIMMs and DDR memory modules in the DDR DIMMs.*
- *In dual-channel mode, make sure that you install memory modules of **the same type and density** in different channel DDR DIMMs.*
- *To enable successful system boot-up, always insert the memory modules into the **DIMM1 first.***

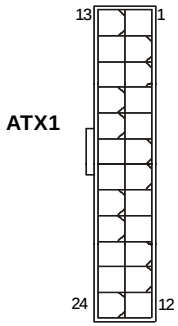
# Power Supply

## ATX 24-Pin Power Connector: ATX1

This connector allows you to connect an ATX 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.




You may use the 20-pin ATX power supply as you like. If you'd like to use the 20-pin ATX power supply, please plug your power supply along with pin 1 & pin 13 (refer to the image at the right hand). There is also a foolproof design on pin 11, 12, 23 & 24 to avoid wrong installation.

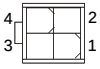



**Pin Definition**

| PIN | SIGNAL | PIN | SIGNAL |
|---|---|---|---|
| 1 | +3.3V | 13 | +3.3V |
| 2 | +3.3V | 14 | -12V |
| 3 | GND | 15 | GND |
| 4 | +5V | 16 | PS-ON# |
| 5 | GND | 17 | GND |
| 6 | +5V | 18 | GND |
| 7 | GND | 19 | GND |
| 8 | PWROK | 20 | Res |
| 9 | 5VSB | 21 | +5V |
| 10 | +12V | 22 | +5V |
| 11 | +12V | 23 | +5V |
| 12 | +3.3V | 24 | GND |

## ATX 12V Power Connector: JPW1

This 12V power connector JPW1 is used to provide power to the CPU.



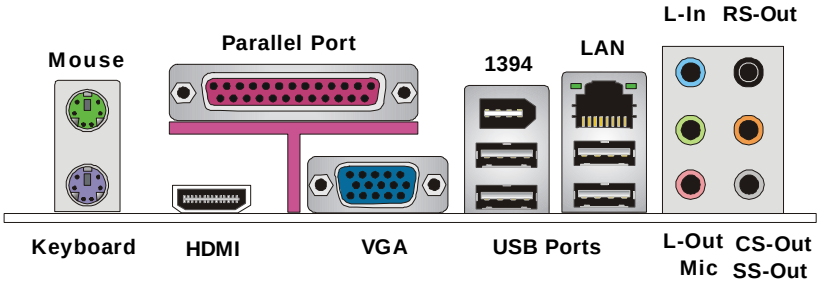

**JPW1 Pin Definition**

| PIN | SIGNAL |
|---|---|
| 1 | GND |
| 2 | GND |
| 3 | 12V |
| 4 | 12V |

**Important**

1. *Maker sure that all the connectors are connected to proper ATX power supplies to ensure stable operation of the mainboard.*
2. *Power supply of 350 watts (and above) is highly recommended for system stability.*

# Back Panel



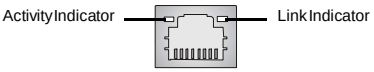

**▶ PS/2 Mouse/Keyboard Connector**
The standard PS/2® mouse/keyboard DIN connector is for a PS/2® mouse/keyboard.

**▶ Parallel Port**
A parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.

**▶ HDMI Port (optional)**
The High-Definition Multimedia Interface (HDMI) is an all-digital audio/video interface capable of transmitting uncompressed streams. HDMI supports all TV format, including standard, enhanced, or high-definition video, plus multi-channel digital audio on a single cable.

**▶ IEEE 1394 Port (optional)**
The 1394 port on the back panel provides connection to 1394 devices.

**▶ LAN (RJ-45) Jack**
The standard RJ-45 jack is for connection to single Local Area Network (LAN). You can connect a network cable to it.




| LED | Color | LED State | condition |
|---|---|---|---|
| Left | Orange | Off | LAN link is not established. |
| | | On (steady state) | LAN link is established. |
| | | On (brighter & pulsing) | The computer is communicating with another computer on the LAN. |
| Right | Green | Off | 10 Mbit/sec data rate is selected. |
| | | On | 100 Mbit/sec data rate is selected. |
| | Orange | On | 1000 Mbit/sec data rate is selected. |

### ▶ USB Connectors

The OHCI (Open Host Controller Interface) Universal Serial Bus root is for attaching USB devices such as keyboard, mouse, or other USB-compatible devices.

### ▶ Audio Port Connectors

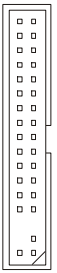
These audio connectors are used for audio devices. You can differentiate the color of the audio jacks for different audio sound effects.

- **Blue audio jack** - Line In, is used for external CD player, tapeplayer or other audio devices.
- **Green audio jack** - Line Out, is a connector for speakers or headphones.
- **Pink audio jack** - Mic In, is a connector for microphones.
- **Black audio jack** - Rear-Surround Out in 4 / 5.1 / 7.1 channel mode.
- **Orange audio jack** - Center/ Subwoofer Out in 5.1 / 7.1 channel mode.
- **Gray audio jack** - Side-Surround Out in 7.1 channel mode.

# Connectors

## Floppy Disk Drive Connector: FDD1

This standard FDD connector supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types.

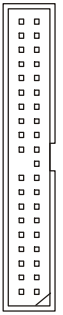


FDD1

## ATA133 Hard Disk Connectors: IDE1

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA 66/100/133 controller that provides PIO mode 0~4, Bus Master, and Ultra DMA 66/100/133 function. You can connect hard disk drives, CD-ROM and other IDE devices.

The Ultra ATA133 interface boosts data transfer rates between the computer and the hard drive up to 133 megabytes (MB) per second. The new interface is one-third faster than earlier record-breaking Ultra ATA/100 technology and is backwards compatible with the existing Ultra ATA interface.



IDE1

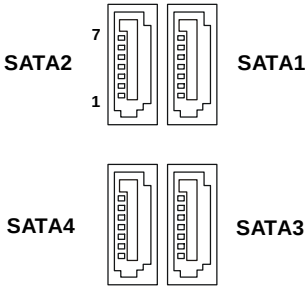
**IDE1** (Primary IDE Connector)
IDE1 can connect a Master and a Slave drive. You must configure the second hard drive to Slave mode by setting the jumper accordingly.

**Important**

*If you install two hard disks on IDE cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.*

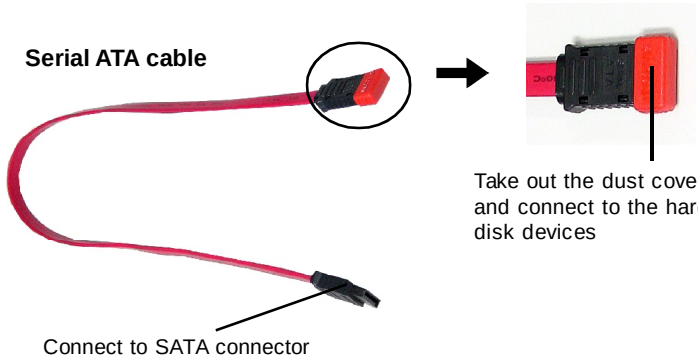
## Serial ATA II Connectors: SATA1~SATA4

SATA1~SATA4 are high-speed SATAII interface ports. Each supports data rates of 300 MB/s and is fully compliant with Serial ATA specifications. Each Serial ATA connector can connect to 1 hard disk device.




**Pin Definition**

| PIN | SIGNAL | PIN | SIGNAL |
|---|---|---|---|
| 1 | GND | 2 | TXP |
| 3 | TXN | 4 | GND |
| 5 | RXN | 6 | RXP |
| 7 | GND | | |

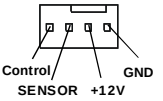



**Important**

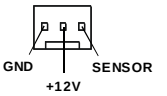
*Please do not fold the Serial ATA cable into 90-degree angle. Otherwise, data loss may occur during transmission.*

## Fan Power Connectors: CPUFAN1, SYSFAN1

The fan power connectors support system cooling fan with +12V. When connecting the wire to the connectors, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.




**CPUFAN1**




**SYSFAN1**

**Important**

1. *Please refer to the recommended CPU fans at AMD® official website or consult the vendors for proper CPU cooling fan.*
2. *Always consult the vendors for proper CPU cooling fan.*
3. *Fan/heatsink with 3 or 4 pins are both available for CPUFAN1.*

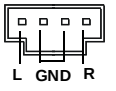
## Chassis Intrusion Switch Connector: JCI1

This connector connects to a 2-pin chassis switch. If the chassis is opened, the switch will be short. The system will record this status and show a warning message on the screen. To clear the warning, you must enter the BIOS utility and clear the record.

**JCI1**

## CD-In Connector: JCD1

This connector is provided for CD-ROM audio.




**JCD1**

## Front Panel Audio Connector: JAUD1

The JAUD1 front panel audio connector allows you to connect the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.

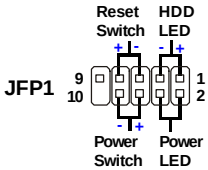
JAUD1

**JAUD1 Pin Definition**

| PIN | SIGNAL | DESCRIPTION |
|---|---|---|
| 1 | AUD_MIC | Front panel microphone input signal |
| 2 | AUD_GND | Ground used by analog audio circuits |
| 3 | AUD_MIC_BIAS | Microphone power |
| 4 | AUD_VCC | Filtered +5V used by analog audio circuits |
| 5 | AUD_FPOUT_R | Right channel audio signal to front panel |
| 6 | AUD_RET_R | Right channel audio signal return from front panel |
| 7 | HP_ON | Reserved for future use to control headphone amplifier |
| 8 | KEY | No pin |
| 9 | AUD_FPOUT_L | Left channel audio signal to front panel |
| 10 | AUD_RET_L | Left channel audio signal return from front panel |

## Front Panel Connectors: JFP1

The mainboard provides two front panel connectors for electrical connection to the front panel switches and LEDs. The JFP1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.

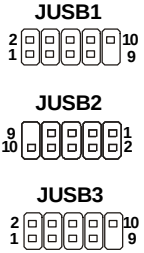



**JFP1 Pin Definition**

| PIN | SIGNAL | DESCRIPTION |
|---|---|---|
| 1 | HD_LED + | Hard disk LED pull-up |
| 2 | FP PWR/SLP | MSG LED pull-up |
| 3 | HD_LED - | Hard disk active LED |
| 4 | FP PWR/SLP | MSG LED pull-up |
| 5 | RST_SW - | Reset Switch low reference pull-down to GND |
| 6 | PWR_SW+ | Power Switch high reference pull-up |
| 7 | RST_SW + | Reset Switch high reference pull-up |
| 8 | PWR_SW- | Power Switch low reference pull-down to GND |
| 9 | RSVD_DNU | Reserved. Do not use. |

## Front USB Connectors: JUSB1, JUSB2 & JUSB3

The mainboard provides USB 2.0 pinheaders (optional USB 2.0 bracket available) that are compliant with Intel® I/O Connectivity Design Guide. USB 2.0 technology increases data transfer rate up to a maximum throughput of 480Mbps, which is 40 times faster than USB 1.1, and is ideal for connecting high-speed USB interface peripherals such as **USB HDD**, **digital cameras**, **MP3 players**, **printers**, **modems and the like**.




**Pin Definition**

| PIN | SIGNAL | PIN | SIGNAL |
|---|---|---|---|
| 1 | VCC | 2 | VCC |
| 3 | USB0- | 4 | USB1- |
| 5 | USB0+ | 6 | USB1+ |
| 7 | GND | 8 | GND |
| 9 | Key(no pin) | 10 | USBOC |

**Important**

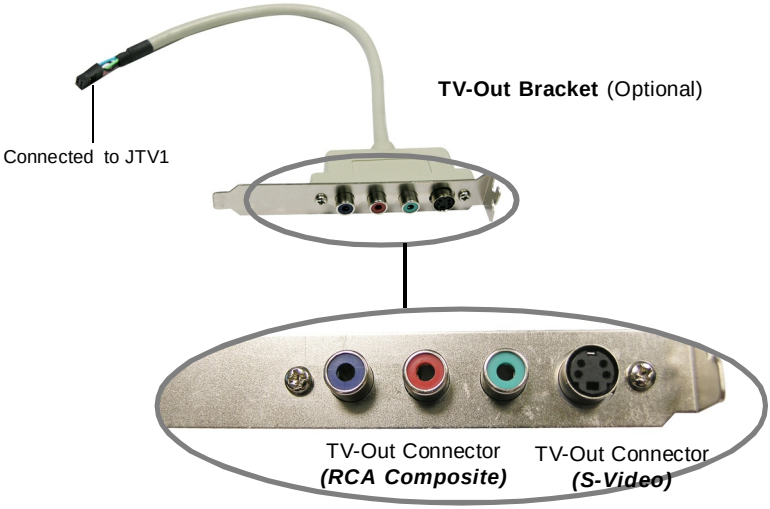
*Note that the pins of VCC and GND must be connected correctly to avoid possible damage.*

## TV-Out Connector: JTV1 (Optional)

The mainboard optionally provides a TV-Out connector for you to attach a TV-Out bracket that integrates HDTV-out. The TV-Out bracket offers two types of TV-Out connectors: S-Video and RCA Composite connectors. Select the appropriate one to connect to the standard television or the HDTV (High-Definition TeleVision) and it will be able to display PC's information.

**JTV1 Pin Definition**

| Pin | Description | Pin | Description |
|---|---|---|---|
| 1 | GND | 4 | COMP |
| 2 | Y OUT | 5 | GND |
| 3 | C OUT | | |




**Important**

1. *Please note that the TV-Out bracket can connect to one TV only. Users have to choose either the RCA Composite or the S-Video to connect. Simultaneous connection (of this bracket) to two TVs is prohibited and may lead to the malfunction of the TVs.*

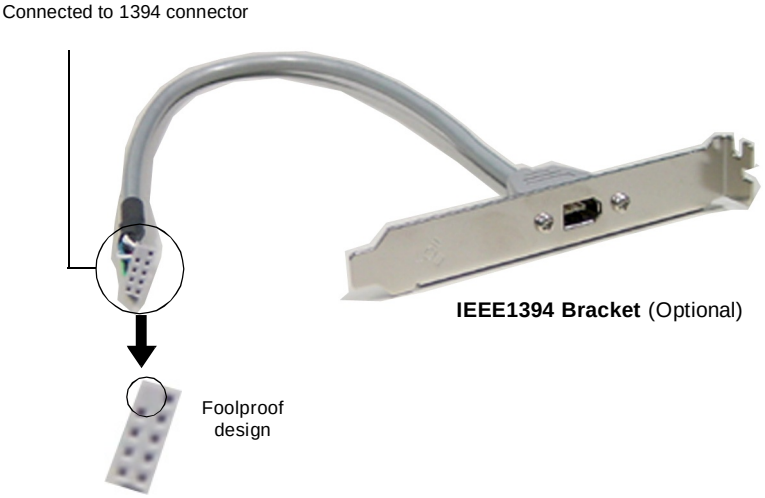
## IEEE 1394 Connector: J1394_1

The mainboard provides IEEE1394 pinheader that allows you to connect IEEE 1394 ports via an external IEEE1394 bracket (optional).

J1394_1

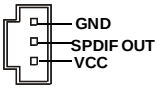
**Pin Definition**

| PIN | SIGNAL | PIN | SIGNAL |
|---|---|---|---|
| 1 | TPA+ | 2 | TPA- |
| 3 | Ground | 4 | Ground |
| 5 | TPB+ | 6 | TPB- |
| 7 | Cable power | 8 | Cable power |
| 9 | Key (no pin) | 10 | Ground |

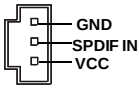


## SPDIF-Out / SPDIF-In Connector: SPDOUT1 / SPDIN1 (Optional)

This connector is used to connect SPDIF (Sony & Philips Digital Interconnect Format) interface for digital audio transmission.

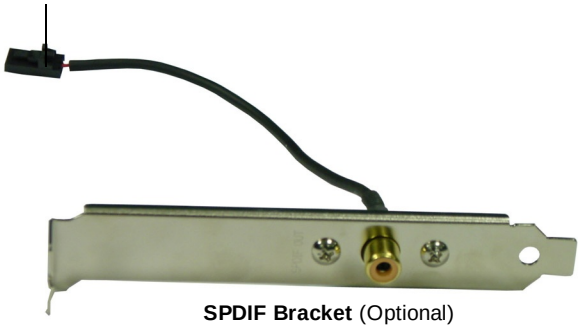



**SPDOUT1**




**SPDIN1**

Connected to SPDOUT1 / SPDIN1



**SPDIF Bracket** (Optional)

## JSPI Debugging Pin Header: JSPI1

The pin header is for internal debugging only.

**JSPI1**

**JSPI1 Pin Definition**

| PIN | SIGNAL | PIN | SIGNAL |
|---|---|---|---|
| 1 | VCC3_SB | 2 | VCC3_SB |
| 3 | SPI_MISO | 4 | SPI_MOSI_F |
| 5 | SPI_CSO_F# | 6 | SPI_CLK_F |
| 7 | GND | 8 | GND |
| 9 | *Reserved* | 10 | NC |

# Jumpers

## Clear CMOS Jumper: JBAT1

There is a CMOS RAM onboard that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, set the JBAT1 (Clear CMOS Jumper ) to clear data.

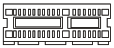
**Important**

*You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.*

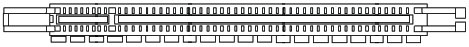
# Slots

## PCI (Peripheral Component Interconnect) Express Slots

PCI Express architecture provides a high performance I/O infrastructure for Desktop Platforms with transfer rates starting at 2.5 Giga transfers per second over a PCI Express x1 lane for Gigabit Ethernet, TV Tuners, 1394 controllers, and general purpose I/O. Also, desktop platforms with PCI Express Architecture will be designed to deliver highest performance in video, graphics, multimedia and other sophisticated applications. Moreover, PCI Express architecture provides a high performance graphics infrastructure for Desktop Platforms doubling the capability of existing AGP 8x designs with transfer rates of 4.0 GB/s over a PCI Express x16 lane for graphics controllers, while PCI Express x1 supports transfer rate of 250 MB/s.



**PCI Express x1 Slot**



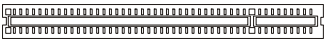
**PCI Express x16 Slot**

**Important**

*1. When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to configure any necessary hardware or software settings for the ex pansion card, such as jumpers, switches or BIOS configuration.*

## PCI (Peripheral Component Interconnect) Slots

The PCI slots support LAN cards, SCSI cards, USB cards, and other add-on cards that comply with PCI specifications. At 32 bits and 33 MHz, it yields a throughput rate of 133 MBps.



**32-bit PCI Slot**

## PCI Interrupt Request Routing

The IRQ, acronym of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus pins as follows:

| | Order 1 | Order 2 | Order 3 | Order 4 |
|---|---|---|---|---|
| PCI Slot 1 | INT A# | INT B# | INT C# | INT D# |
| PCI Slot 2 | INT B# | INT C# | INT D# | INT A# |

# Chapter 3
# BIOS Setup

This chapter provides information on the BIOS Setup program and allows you to configure the system for optimum use.
You may need to run the Setup program when:

- An error message appears on the screen during the system booting up, and requests you to run SETUP.
- You want to change the default settings for customized features.

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## Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> key to enter Setup.

**Press DEL to enter SETUP**

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

**Important**

1. *The items under each BIOS category described in this chapter are under continuous update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be held for reference only.*
2. *Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format:*

*A7327AMS V1.0 050506 where:*

*1st digit refers to BIOS maker as A = AMI, W = AWARD, and P = PHOENIX.*
*2nd - 5th digit refers to the model number.*
*6th digit refers to the chipset as I = Intel, N = nVidia, A = ATi and V = VIA.*
*7th - 8th digit refers to the customer as MS = all standard customers.*
*V1.0 refers to the BIOS version.*
*050506 refers to the date this BIOS was released.*

## Control Keys

| | |
|---|---|
| <↑> | Move to the previous item |
| <↓> | Move to the next item |
| <←> | Move to the item in the left hand |
| <→> | Move to the item in the right hand |
| <Enter> | Select the item |
| <Esc> | Jumps to the Exit menu or returns to the main menu from a submenu |
| <+/PU> | Increase the numeric value or make changes |
| <-/PD> | Decrease the numeric value or make changes |
| <F6> | Load Optimized Defaults |
| <F10> | Save configuration changes and exit setup |

## Getting Help

After entering the Setup menu, the first menu you will see is the Main Menu.

### Main Menu

The main menu lists the setup functions you can make changes to. You can use the arrow keys ( ↑↓ ) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

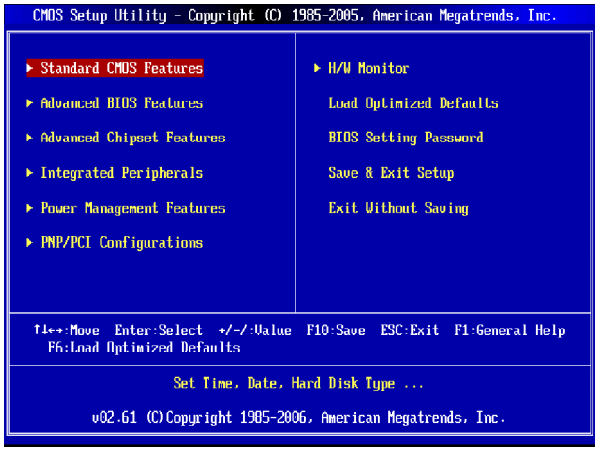
### Sub-Menu

If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys ( ↑↓ ) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press the <Esc >.

## General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

# The Main Menu


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Standard CMOS Features
Advanced BIOS Features
Advanced Chipset Features
Integrated Peripherals
Power Management Features
PNP/PCI Configurations
H/W Monitor
Load Optimized Defaults
BIOS Setting Password
Save & Exit Setup
Exit Without Saving
↑↓→←:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F6:Load Optimized Defaults
Set Time, Date, Hard Disk Type ...
v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.

**▶ Standard CMOS Features**
Use this menu for basic system configurations, such as time, date etc.

**▶ Advanced BIOS Features**
Use this menu to setup the items of AMI® special enhanced features.

**▶ Advanced Chipset Features**
Use this menu to change the values in the chipset registers and optimize your system's performance.

**▶ Integrated Peripherals**
Use this menu to specify your settings for integrated peripherals.

**▶ Power Management Setup**
Use this menu to specify your settings for power management.

**▶ PNP/PCI Configurations**
This entry appears if your system supports PnP/PCI.

**▶ H/W Monitor**
This entry shows your PC health status.

**▶ Load Optimized Defaults**
Use this menu to load the default values set by the mainboard manufacturer specifically for optimal performance of the mainboard.

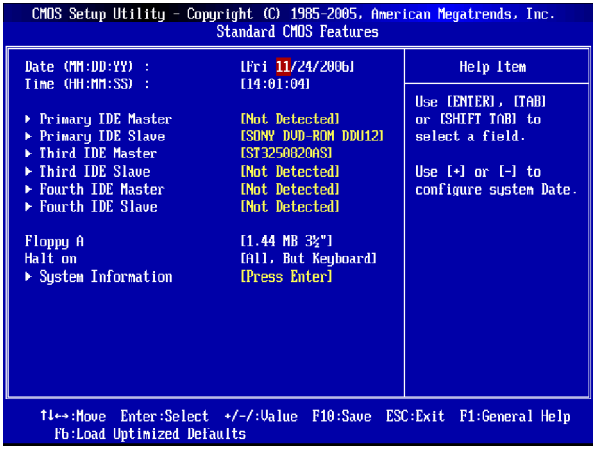
▶ **BIOS Setting Password**
Use this menu to set the password for BIOS.

▶ **Save & Exit Setup**
Save changes to CMOS and exit setup.

▶ **Exit Without Saving**
Abandon all changes and exit setup.

# Standard CMOS Features

The items in Standard CMOS Features Menu includes some basic setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Standard CMOS Features
Date (MM:DD:YY) : [Fri 11/24/2006]
Time (HH:MM:SS) : [14:01:04]
▸ Primary IDE Master [Not Detected]
▸ Primary IDE Slave [SONY DVD-ROM DDU12]
▸ Third IDE Master [ST3250820AS]
▸ Third IDE Slave [Not Detected]
▸ Fourth IDE Master [Not Detected]
▸ Fourth IDE Slave [Not Detected]
Floppy A [1.44 MB 3½"]
Halt on [All, But Keyboard]
▸ System Information [Press Enter]
Help Item
Use [ENTER], [TAB] or [SHIFT TAB] to select a field.
Use [+] or [-] to configure system Date.
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F6:Load Uptimized Defaults

**▶ Date (MM:DD:YY)**

This allows you to set the system to the date that you want (usually the current date). The format is <day><month> <date> <year>.

| | |
|---|---|
| **day** | Day of the week, from Sun to Sat, determined by BIOS. Read-only. |
| **month** | The month from Jan. through Dec. |
| **date** | The date from 1 to 31 can be keyed by numeric function keys. |
| **year** | The year can be adjusted by users. |

**▶ Time (HH:MM:SS)**

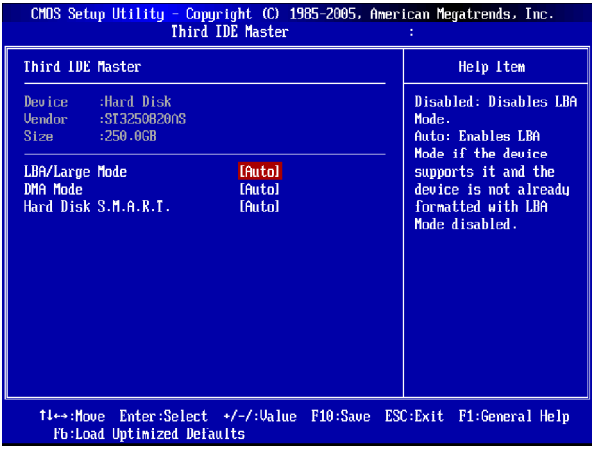
This allows you to set the system time that you want (usually the current time). The time format is <hour> <minute> <second>.

**▶ Primary IDE Master/ Slave, (Third/ Fourth IDE Master/ Slave => for SATA devices)**

Press <Enter> to enter the sub-menu, and the following screen appears.

**Important**

***Primary IDE Master/ Slave, Third/ Fourth IDE Master/ Slave*** *are appearing when you connect the HD devices to the IDE/ SATA connector on the mainboard.*


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Third IDE Master
Third IDE Master
Device :Hard Disk
Vendor :ST3250820NS
Size :250.0GB
LBA/Large Mode [Auto]
DMA Mode [Auto]
Hard Disk S.M.A.R.T. [Auto]
Help Item
Disabled: Disables LBA Mode.
Auto: Enables LBA Mode if the device supports it and the device is not already formatted with LBA Mode disabled.
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F6:Load Uptimized Defaults

**▶ Device/ Vender/ Size**
It will showing the device information that you connected to the IDE/SATA connector.

**▶ LBA/Large Mode**
This allows you to enable or disable the LBA Mode. Setting to Auto enables LBA mode if the device supports it and the devices is not already formatted with LBA mode disabled.

**▶ DMA Mode**
Select DMA Mode.

**▶ Hard Disk S.M.A.R.T.**
This allows you to activate the S.M.A.R.T. (Self-Monitoring Analysis & Reporting Technology) capability for the hard disks. S.M.A.R.T is a utility that monitors your disk status to predict hard disk failure. This gives you an opportunity to move data from a hard disk that is going to fail to a safe place before the hard disk becomes offline.

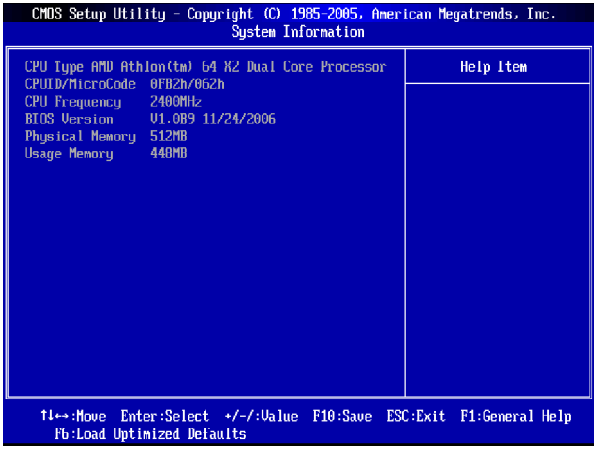
**▶ Floppy A**
This item allows you to set the type of floppy drives installed.

**▶ Halt On**
The setting determines whether the system will stop if an error is detected at boot. Available options are:

| | |
|---|---|
| [No Errors] | The system doesn't stop for any detected error. |
| [All, But Keyboard] | The system doesn't stop for a keyboard error. |

### ▶ System Information

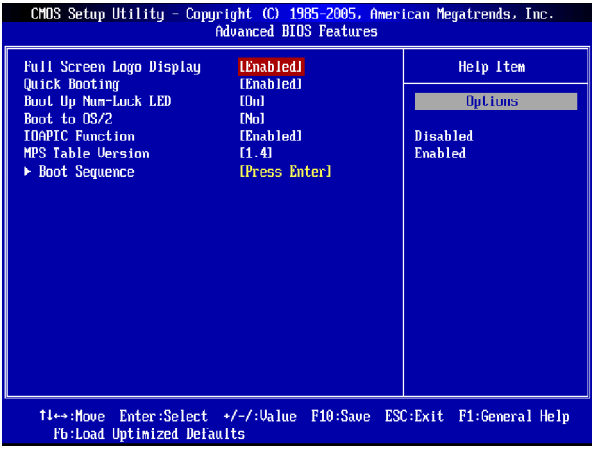
Press <Enter> to enter the sub-menu, and the following screen appears.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
System Information
CPU Type AMD Athlon(tm) 64 X2 Dual Core Processor
CPUID/MicroCode 0FB2h/062h
CPU Frequency 2400MHz
BIOS Version V1.0B9 11/24/2006
Physical Memory 512MB
Usage Memory 440MB
Help Item
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F6:Load Optimized Defaults

### ▶ CPU Infromation/ BIOS Version/ Memory Information

These items show the CPU information, BIOS version and memory status of your system (read only).

# Advanced BIOS Features




**▶ Full Screen LOGO Display**

This item enables you to show the company logo on the bootup screen. Settings are:

[Enabled] Shows a still image (logo) on the full screen at boot.

[Disabled] Shows the POST messages at boot.

**▶ Quick Booting**

Setting the item to [Enabled] allows the system to boot within 5 seconds since it will skip some check items.

**▶ Boot Up Num-Lock LED**

This setting is to set the Num Lock status when the system is powered on. Setting to [On] will turn on the Num Lock key when the system is powered on. Setting to [Off] will allow users to use the arrow keys on the numeric keypad.

**▶ Boot To OS/2**

This allows you to run the OS/2® operating system with DRAM larger than 64MB. When you choose [No], you cannot run the OS/2® operating system with DRAM larger than 64MB. But it is possible if you choose [Yes].

**▶ IOAPIC Function**

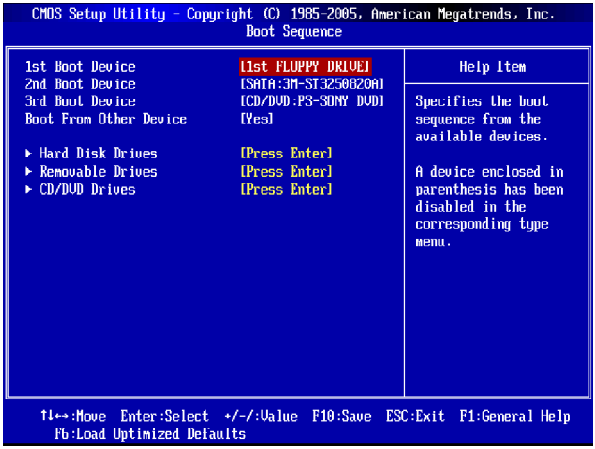
This field is used to enable or disable the APIC (Advanced Programmable Interrupt Controller). Due to compliance with PC2001 design guide, the system is able to run in APIC mode. Enabling APIC mode will expand available IRQ resources for the system.

### ▶ MPS Table Version

This field allows you to select which MPS (Multi-Processor Specification) version to be used for the operating system. You need to select the MPS version supported by your operating system. To find out which version to use, consult the vendor of your operating system.

### ▶ Boot Sequence

Press <Enter> to enter the sub-menu and the following screen appears:




### ▶ 1st/2nd/3rd Boot Device

The items allow you to set the sequence of boot devices where BIOS attempts to load the disk operating system.

### ▶ Boot From Other Device

Setting the option to [Yes] allows the system to try to boot from other device if the system fails to boot from the 1st/2nd/3rd boot device.

### ▶ Hard Disk Drives

This feature allows you to specify the hard disk boot priority.

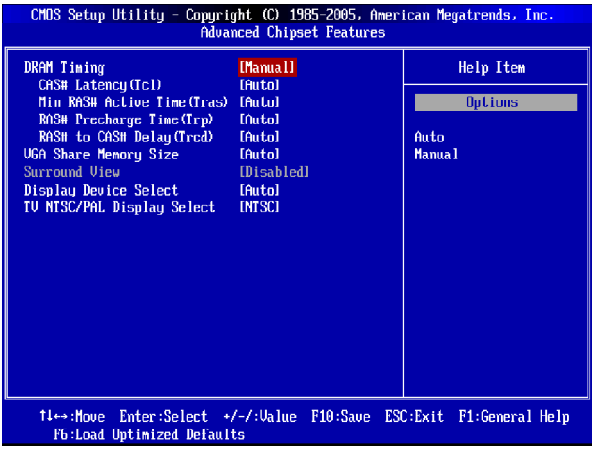
### ▶ Removable Drives

This feature allows you to specify the removable device boot priority.

### ▶ CD/DVD Drives

This feature allows you to specify the CD/DVD device boot priority.

# Advanced Chipset Features




**▶ DRAM Timing**
The value in this field depends on performance parameters of the installed memory chips (DRAM). Do not change the value from the factory setting unless you install new memory that has a different performance rating than the original DRAMs.

**▶ CAS# Latency (Tcl)**
This controls the CAS latency, which determines the timing delay (in clock cycles) before SDRAM starts a read command after receiving it.

**▶ Min RAS# Active Time (Tras)**
This setting determines the time RAS takes to read from and write to a memory cell.

**▶ RAS# Precharge Time (Trp)**
This item controls the number of cycles for Row Address Strobe (RAS) to be allowed to precharge. If insufficient time is allowed for the RAS to accumulate its charge before DRAM refresh, refreshing may be incomplete and DRAM may fail to retain data. This item applies only when synchronous DRAM is installed in the system.

**▶ RAS# to CAS# Delay (Trcd)**
When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe). The less the clock cycles, the faster the DRAM performance.

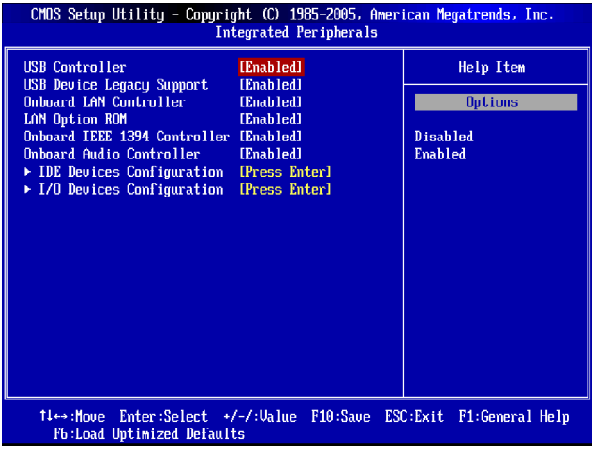
**▶ VGA Share Memory Size**
The system shares memory to the onboard VGA card. This setting controls the exact memory size shared to the VGA card.

**▶ Surround View**
SurroundView Technology that allows you to add an ATI external graphics card to enable three separate displays.

**▶ Display Device Select**
This item allows you to select the display device.

**▶ TV NTSC/PAL Display Select**
This item allows you to select NTSC or PAL signal.

# Integrated Peripherals


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Integrated Peripherals
USB Controller [Enabled]
USB Device Legacy Support [Enabled]
Onboard LAN Controller [Enabled]
LAN Option ROM [Enabled]
Onboard IEEE 1394 Controller [Enabled]
Onboard Audio Controller [Enabled]
▶ IDE Devices Configuration [Press Enter]
▶ I/O Devices Configuration [Press Enter]
Help Item
Options
Disabled
Enabled
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F6:Load Optimized Defaults

**▶ USB Controller**
This setting allows you to enable/disable the onboard USB 1.1/ 2.0 controller.

**▶ USB Device Legacy Support**
Select [Enabled] if you need to use a USB-interfaced device in the operating system.

**▶ Onboard LAN Controller**
This setting allows you to enable/disable the onboard LAN controller.

**▶ LAN Option ROM**
This item is used to decide whether to invoke the Boot ROM of the onboard LAN.

**▶ Onboard IEEE1394 Controller**
This item allows you to enable/disable the onboard IEEE1394 controller.

**▶ Onboard Audio Controller**
This setting is used to enable/disable the onboard audio controller.

**▶ IDE Devices Configuration**
Press <Enter> to enter the sub-menu:

**▶ PCI IDE BusMaster**
This item allows you to enable/ disable BIOS to used PCI busmastering for reading/ writing to IDE drives.

**▶ OnChip SATA Channel**
This item allows users to enable or disable the SATA controller.

▶ **OnChip SATA Type**
This item is used to define the SATA type. Before configure the RAID set, you have to choose the RAID for the SATA devices.

▶ **I/O Devices Configuration**
Press <Enter> to enter the sub-menu:

▶ **Parallel Port**
There is a built-in parallel port on the on-board Super I/O chipset that provides Standard, ECP, and EPP features. It has the following options:

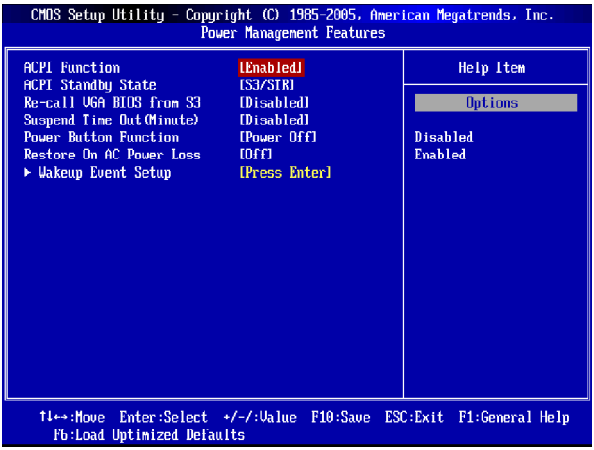
| | |
|---|---|
| [Disabled] | |
| [3BC] | Line Printer port 0 |
| [278] | Line Printer port 2 |
| [378] | Line Printer port 1 |

▶ **Parallel Port Mode**

| | |
|---|---|
| [Normal] | Standard Parallel Port |
| [EPP] | Enhanced Parallel Port |
| [ECP] | Extended Capability Port |
| [ECP+EPP] | Extended Capability Port + Enhanced Parallel Port |
| [Bi Directional] | |

To operate the onboard parallel port as Standard Parallel Port only, choose [Normal]. To operate the onboard parallel port in the EPP mode simultaneously, choose [EPP]. By choosing [ECP], the onboard parallel port will operate in ECP mode only. Choosing [ECP + EPP] will allow the onboard parallel port to support both the ECP and EPP modes simultaneously.

# Power Management Setup


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Power Management Features
ACPI Function [Enabled]
ACPI Standby State [S3/STR]
Re-call VGA BIOS from S3 [Disabled]
Suspend Time Out(Minute) [Disabled]
Power Button Function [Power Off]
Restore On AC Power Loss [Off]
▶ Wakeup Event Setup [Press Enter]
Help Item
Options
Disabled
Enabled
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F6:Load Uptimized Defaults

## Important

*S3-related functions described in this section are available only when your BIOS supports S3 sleep mode.*

**▶ ACPI Function**

This item is to activate the ACPI (Advanced Configuration and Power Management Interface) Function. If your operating system is ACPI-aware, such as Windows 98SE/ 2000/ME/ XP, select [Enabled].

**▶ ACPI Standby State**

This item specifies the power saving modes for ACPI function. If your operating system supports ACPI, such as Windows 2000/ XP , you can choose to enter the Standby mode in S1(POS) or S3(STR) fashion through the setting of this field. Settings are:

[S1/POS] The S1 sleep mode is a low power state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system context.

[S3/STR] The S3 sleep mode is a lower power state where the information of system configuration and open applications/files is saved to main memory that remains powered while most other hardware components turn off to save energy. The information stored in memory will be used to restore the system when a “wake up” event occurs.

**▶ Re-Call VGA BIOS from S3**
Selecting [Enabled] allows BIOS to call VGA BIOS to initialize the VGA card when system wakes up (resumes) from S3 sleep state. The system resume time is shortened when you disable the function, but system will need an AGP driver to initialize the VGA card. Therefore, if the AGP driver of the card does not support the initialization feature, the display may work abnormally or not function after resuming from S3.

**▶ Suspend Time Out (Minute)**
If system activity is not detected for the length of time specified in this field, all devices except CPU will be shut off.

**▶ Power Button Function**
This feature sets the function of the power button. Settings are:

| | |
|---|---|
| [Power On/ Off] | The power button functions as normal power off button. |
| [Suspend] | When you press the power button, the computer enters the suspend/sleep mode, but if the button is pressed for more than four seconds, the computer is turned off. |

**▶ Restore On AC Power Loss**
This item specifies whether your system will reboot after a power failure or interrupt occurs. Settings are:

| | |
|---|---|
| [Off] | Always leaves the computer in the power off state. |
| [On] | Always leaves the computer in the power on state. |
| [Last State] | Restores the system to the status before power failure or interrupt occurred. |

**▶ Wakeup Event Setup**
Press <Enter> to enter the sub-menu:

**▶ Resume From S3 By USB Device**
The item allows the activity of the USB device to wake up the system from S3 (Suspend to RAM) sleep state.

**▶ Resume From S3 By PS/2 Keyboard**
This controls how the PS/2 keyboard is able to power on the system. If you choose *Specific Key*, the power button on the case will not function anymore and you must type the password to power on the system.

**▶ Specific Key PowerOn**
If **Resume From S3 By PS/2 Keyboard** is set to [Specific Key], then you can set the specific key in the field for the PS/2 keyboard to power on the system.

**▶ Resume from S3 By PS/2 Mouse**
This setting determines whether the system will be awakened from what power saving modes when input signal of the PS/2 mouse is detected.

**▶ Resume by PCI Device (PME#)**
When set to [Enabled], the feature allows your system to be awakened from the

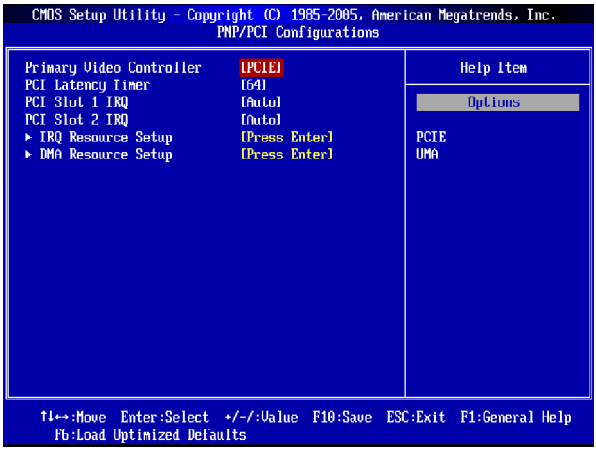
power saving modes through any event on PME (Power Management Event).

**▶ Resume by PCIE Device**
When set to [Enabled], the feature allows your system to be awakened from the power saving modes through any event on PCIE device.

**▶ Resume by RTC Alarm**
The field is used to enable or disable the feature of booting up the system on a scheduled time/date.

# PNP/PCI Configurations

This section describes configuring the PCI bus system and PnP (Plug & Play) feature. PCI, or **P**eripheral **C**omponent **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
PNP/PCI Configurations
Primary Video Controller [PCIE]
PCI Latency Timer [64]
PCI Slot 1 IRQ [Auto]
PCI Slot 2 IRQ [Auto]
▸ IRQ Resource Setup [Press Enter]
▸ DMA Resource Setup [Press Enter]
Help Item
Options
PCIE
UMA
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F6:Load Uptimized Defaults

**▶ Primary Video Controller**
This setting specifies which graphic card is your primary graphics adapter.

**▶ PCI Latency Timer**
This item controls how long each PCI device can hold the bus before another takes over. When set to higher values, every PCI device can conduct transactions for a longer time and thus improve the effective PCI bandwidth. For better PCI performance, you should set the item to higher values.

**▶ PCI Slot 1/2 IRQ**
This setting specifies IRQ for PCI devices.

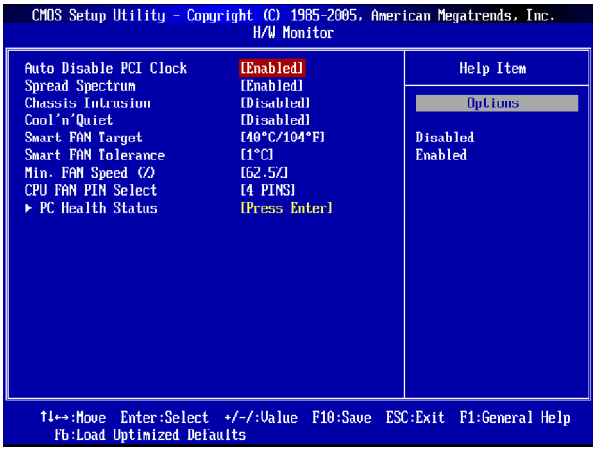
**▶ IRQ Resources Setup**
Press <Enter> and you will enter the sub-menu of the items. IRQ Resources list IRQ 3/4/5/7/9/10/11/12/14/15 for users to set each IRQ a type depending on the type of device using the IRQ. Settings are:

| | |
|---|---|
| *PCI Device* | For Plug & Play compatible devices designed for PCI bus architecture. |
| *Reserved* | The IRQ will be reserved for further request. |

▶ **DMA Resources Setup**

Press <Enter> and you will enter the sub-menu of the items.DMA Resources 0/1/3/5/6/7 for setting determine if BIOS should remove a DMA from the available DMAs passed to devices that are configurable by the system BIOS. The available DMA pool is determined by reading the NVRAM. If more DMAs must be removed from the pool, the end user can reserve the DMA.

# H/W Monitor




**▶ Auto Disable PCI Clock**

This item is used to auto disable the PCI slots. When set to [Enabled], the system will remove (turn off) clocks from empty PCI slots to minimize the electromagnetic interference (EMI).

**▶ Spread Spectrum**

When the motherboard's clock generator pulses, the extreme values (spikes) of the pulses creates EMI (Electromagnetic Interference). The ***Spread Spectrum*** function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. If you do not have any EMI problem, leave the setting at [Disabled] for optimal system stability and performance. But if you are plagued by EMI, select the desired range for EMI reduction. Remember to disable ***Spread Spectrum*** function if you are overclocking, because even a slight jitter can introduce a temporary boost in clock speed which may just cause your overclocked processor to lock up.

**▶ Chassis Intrusion**

The field enables or disables the feature of recording the chassis intrusion status and issuing a warning message if the chassis is once opened. To clear the warning message, set the field to [Reset]. The setting of the field will automatically return to [Enabled] later.

**▶ Cool'n'Quiet**

It provides a CPU temperature detecting function to prevent your CPU's from overheading due to the heavy working loading.

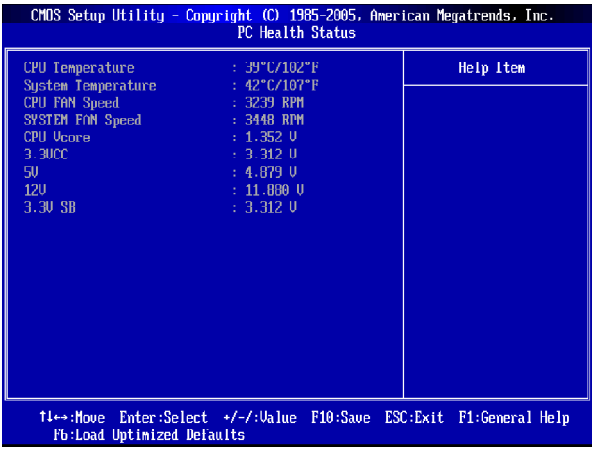
**▶ Smart Fan Target**
The mainboard provides the Smart Fan system which can control the fan speed automatically depending on the current temperature to keep it with in a specific range.

**▶ Smart Fan Tolerance**
You can select a fan tolerance value here for the specific range for the "Smart Fan Target Temp. (ºC)" item. If the current temperature of the fan reaches to the maximum threshold (the temperatures set in the "Smart Fan Target Temp. (ºC)" plus the tolerance values you set here), the fan will speed up for cooling down. On the contrary, if the current temperature reaches to the minimum threshold (the set temperatures minus the tolerance value), the fan will slow down to keep the temperature stable.

**▶ Min. FAN Speed (%)**
This item allows you to set the minimum CPU fan speed.

**▶ CPU FAN PIN Select**
Be sure to select the correct pin number identical to the pin of the CPU fan you purchase.

**▶ PC Health Status**
Press <Enter> to enter the sub-menu and following screen appears.

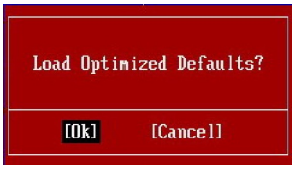

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
PC Health Status
CPU Temperature : 39°C/102°F
System Temperature : 42°C/107°F
CPU FAN Speed : 3239 RPM
SYSTEM FAN Speed : 3448 RPM
CPU Vcore : 1.352 V
3.3VCC : 3.312 V
5V : 4.879 V
12V : 11.880 V
3.3V SB : 3.312 V
Help Item
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit F1:General Help
F6:Load Uptimized Defaults

**▶ CPU/System Temperature, CPU FAN/ SYSTEM FAN Speed, CPU Vcore, 3.3VCC, 5V, 12V, 3.3V SB**
These items display the current status of all of the monitored hardware devices/ components such as CPU voltage, temperatures and all fans' speeds.

## Load Optimized Defaults

The option on the main menu allow users to restore all of the BIOS settings to the Optimized values. The Optimized are the default values set by the mainboard manufacturer specifically for optimal performance of the mainboard.

When you select Load Optimized Defaults, a message as below appears:




Selecting **[OK]** loads the default factory settings for optimal system performance.

## BIOS Setting Password

When you select this function, a message as below will appear on the screen:

Type the password, up to six characters in length, and press <Enter>. The password typed now will replace any previously set password from CMOS memory. You will be prompted to confirm the password. Retype the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.
To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup without entering any password.
When a password has been set, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

# *Appendix A*
# *Realtek ALC888 Audio*

The Realtek ALC888 provides 10-channel DAC that simultaneously supports 7.1 sound playback and 2 channels of independent stereo sound output (multiple streaming) through the Front-Out-Left and Front-Out-Right channels.

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# Installing the Realtek HD Audio Driver

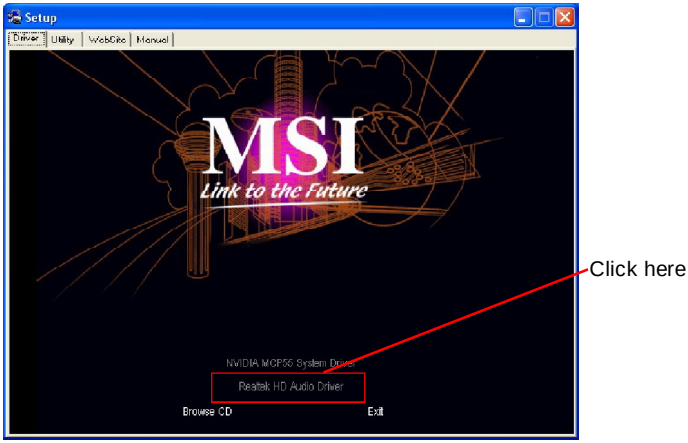
You need to install the driver for Realtek ALC888 codec to function properly before you can get access to 2-, 4-, 6-, 8- channel or 7.1+2 channel audio operations. Follow the procedures described below to install the drivers for different operating systems.

## Installation for Windows 2000/XP

For Windows® 2000, you must install Windows® 2000 Service Pack4 or later before installing the driver. For Windows® XP, you must install Windows® XP Service Pack1 or later before installing the driver.

The following illustrations are based on Windows® XP environment and could look slightly different if you install the drivers in different operating systems.

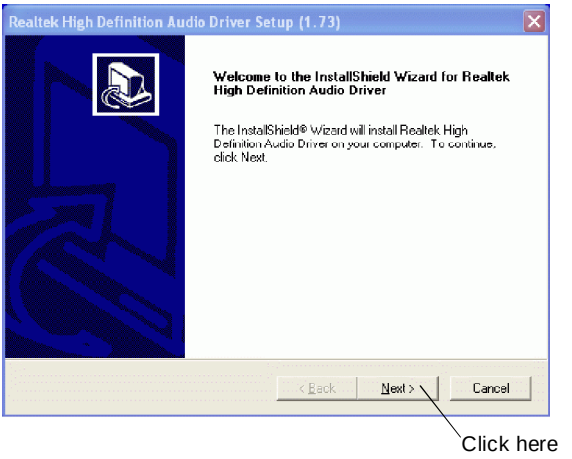
1. Insert the application CD into the CD-ROM drive. The setup screen will automatically appear.
2. Click **Realtek HD Audio Driver**.



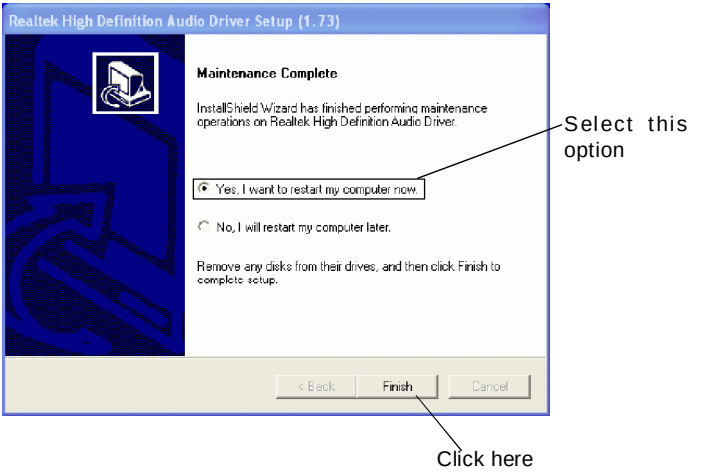

**Important**

*The **HD Audio Configuration** software utility is under continuous update to enhance audio applications. Hence, the program screens shown here in this section may be slightly different from the latest software utility and shall be held for reference only.*

3. Click **Next** to install the Realtek High Definition Audio Driver.

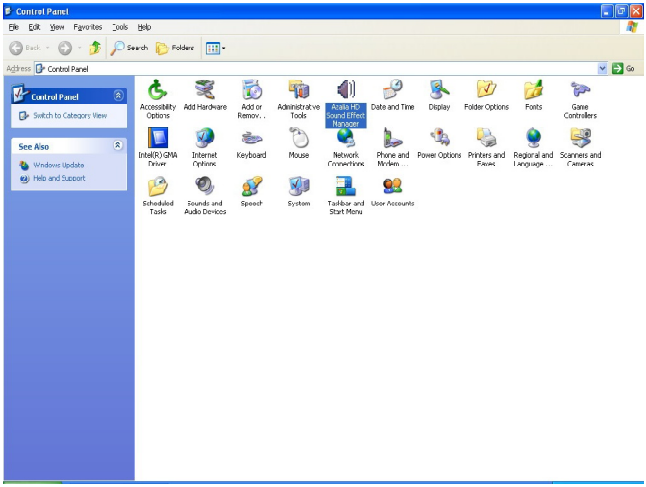

Realtek High Definition Audio Driver Setup (1.73)
Welcome to the InstallShield Wizard for Realtek High Definition Audio Driver
The InstallShield® Wizard will install Realtek High Definition Audio Driver on your computer. To continue, click Next.
< Back
Next >
Cancel
Click here

4. Click **Finish** to restart the system.


Realtek High Definition Audio Driver Setup (1.73)
Maintenance Complete
InstallShield Wizard has finished performing maintenance operations on Realtek High Definition Audio Driver.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel
Select this option
Click here

# Software Configuration

After installing the audio driver, you are able to use the 2-, 4-, 6- or 8- channel audio feature now. Click the audio icon from the system tray at the lower-right corner of the screen to activate the **HD Audio Configuration**. It is also available to enable the audio driver by clicking the **Realtek HD Audio Manager** from the **Control Panel**.



## Sound Effect

Here you can select a sound effect you like from the **Environment** list.

### Environment Simulation

You will be able to enjoy different sound experience by pulling down the arrow, totally 23 kinds of sound effect will be shown for selection. Realtek HD Audio Sound Manager also provides five popular settings “Stone Corridor”, “Bathroom”, “Sewer pipe”, “Arena” and “Audio Corridor” for quick enjoyment.

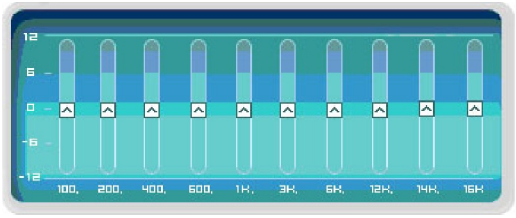
You may choose the provided sound effects, and the equalizer will adjust automatically. If you like, you may also load an equalizer setting or make an new equalizer setting to save as an new one by using the “**Load EQ Setting**” and “**Save Preset**” button, click “**Reset EQ Setting**” button to use the default value, or click “**Delete EQ Setting**” button to remove a preset EQ setting.

There are also other pre-set equalizer models for you to choose by clicking “**Others**” under the **Equalizer** part.

**Equalizer Selection**

Equalizer frees users from default settings; users may create their owned preferred settings by utilizing this tool.

10 bands of equalizer, ranging from 100Hz to 16KHz.




***Save***
The settings are saved permanently for future use

***Reset***
10 bands of equalizer would go back to the default setting

***Enable / Disable***
To disable, you can temporarily stop the sound effect without losing the settings

***Load***
Whenever you would like to use preload settings, simply click this, the whole list will be shown for your selection.

***Delete***
To delete the pre-saved settings which are created from previous steps.

**Frequently Used Equalizer Setting**

Realtek recognizes the needs that you might have. By leveraging our long experience at audio field, Realtek HD Audio Sound Manager provides you certain optimized equalizer settings that are frequently used for your quick enjoyment.

[How to Use It]

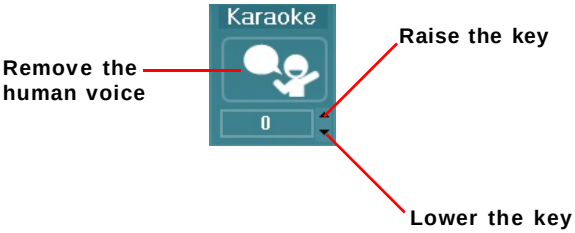
Other than the buttons “Pop” “Live” “Club” & “Rock” shown on the page, to pull down the arrow in “Others”, you will find more optimized settings available to you.

**Karaoke Mode**

Karaoke mode brings Karaoke fun back home. Simply using the music you usually play, Karaoke mode can help you eliminate the vocal of the song or adjust the key to accommodate your range.

1.Vocal Cancellation: Single click on “Voice Cancellation”, the vocal of the song would be eliminated, while the background music is still in place, and you can be that singer!

2.Key Adjustment: Using “Up / Down Arrow” to find a key which better fits your vocal range.



## Mixer

In the **Mixer** part, you may adjust the volumes of the rear and front panels individually.

### 1. Adjust Volume

You can adjust the volume of the speakers that you pluged in front or rear panel by select the **Realtek HD Audio rear output** or **Realtek HD Audio front output** items.

**Important**

*Before set up, please make sure the playback devices are well plugged in the jacks on the rear or front panel. The **Realtek HD Audio front output** item will appear after you pluging the speakers into the jacks on the front panel.*

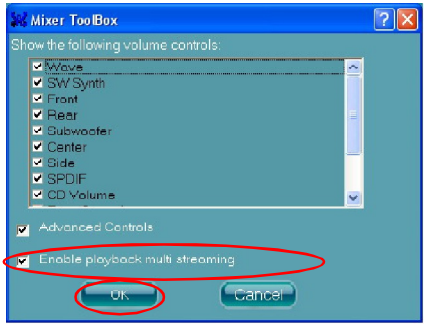
### 2. Multi-Stream Function

ALC888 supports an outstanding feature called Multi-Stream, which means you may play different audio sources simultaneously and let them output respectively from the indicated real panel or front panel. This feature is very helpful when 2 people are using the same computer together for different purposes.

Click the button and the Mixer **ToolBox** menu will appear. Then check the **Enable playback multi-streaming** and click **OK** to save the setup.

**Important**

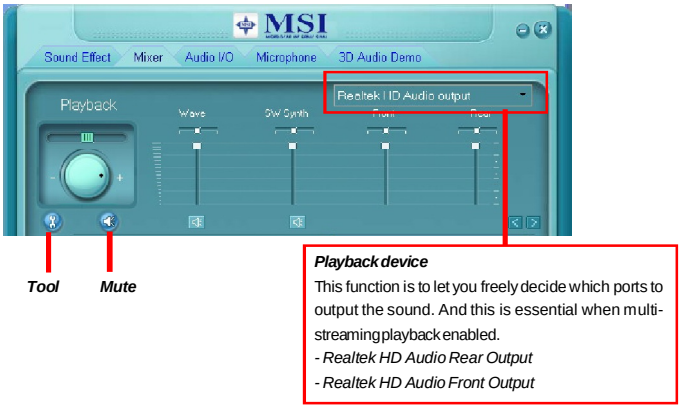
*If you use **AC97 front panel**, the device have to be plugged into the jacks on the panel before enable the multi-stream function.*




When you are playing the first audio source (for example: use Windows Media Player to play DVD/VCD), the output will be played from the rear panel, which is the default setting.

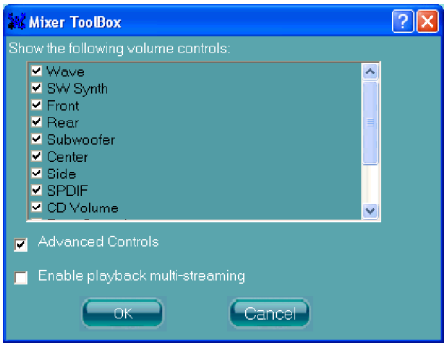
Then you **must** to select the **Realtek HD Audio front output** from the scroll list **first**, and use a different program to play the second audio source (for example: use Winamp to play MP3 files). You will find that the second audio source (MP3 music) will come out from the Line-Out audio jack of Front Panel.

### 3. Playback control




**Mute**
You may choose to mute single or multiple volume controls or to completely mute sound output.

**Tool**
*- Show the following volume controls*
This is to let you freely decide which volume control items to be displayed.
- Advanced controls
- Enable playback multi-streaming
With this function, you will be able to have an audio chat with your friends via headphone (stream 1 from front panel) while still have music (stream 2 from back panel) in play. At any given period, you can have maximum 2 streams operating simultaneously.



### 4. Recording control

**Mute**

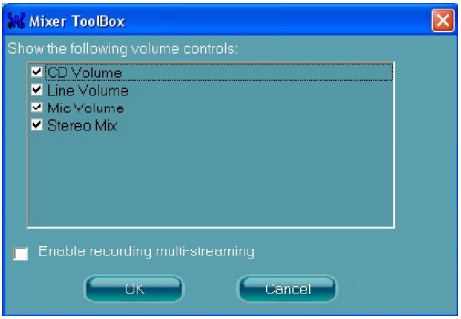
You may choose to mute single or multiple volume controls or to completely mute sound input.

**Tool**

*- Show the following volume controls*

This is to let you freely decide which volume control items to be displayed.

*- Enable recording multi-streaming*




**Important**

*ALC888 allows you to record the CD, Line, Mic and Stereo Mix channels simultaneously, frees you from mixing efforts. At any given period, you may choose 1 of the following 4 channels to record.*

## Audio I/O

In this tab, you can easily configure your multi-channel audio function and speakers. You can choose a desired multi-channel operation here.

a. **Headphone** for the common headphone
b. **2CH Speaker** for Stereo-Speaker Output
c. **4CH Speaker** for 4-Speaker Output
d. **6CH Speaker** for 5.1-Speaker Output
e. **8CH Speaker** for 7.1-Speaker Output

**Speaker Configuration:**

1. Plug the speakers in the corresponding jack.

2. Dialogue “connected device” will pop up for your selection. Please select the device you have plugged in.
   - If the device is being plugged into the correct jack, you will be able to find the icon beside the jack changed to the one that is same as your device.
   - If not correct, Realtek HD Audio Manager will guide you to plug the device into the correct jack.

### Connector Settings

Click to access connector settings.

Connector Settings
Connector Settings
Disable front panel jack detection
Mute rear panel output when front headphone plugged in.
Enable auto popup dialog, when device has been plugged in
OK
Cancel

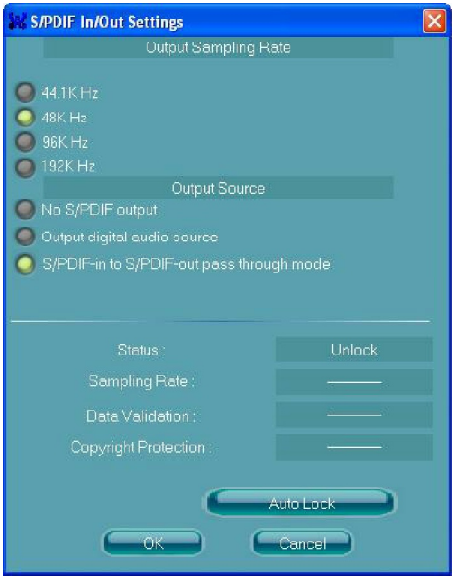
**Disable front panel jack detection (option)**
Find no function on front panel jacks? Please check if front jacks on your system are so-called AC'97 jacks. If so, please check this item to disable front panel jack detection.

**Mute rear panel output when front headphone plugged in.**

**Enable auto popup dialogue, when device has been plugged in**
Once this item checked, the dialog "Connected device" would not automatically pop up when device plugged in.

**S/PDIF**

Short for Sony/Philips Digital Interface, a standard audio file transfer format. S/PDIF allows the transfer of digital audio signals from one device to another without having to be converted first to an analog format. Maintaining the viability of a digital signal prevents the quality of the signal from degrading when it is converted to analog.




**Output Sampling Rate**

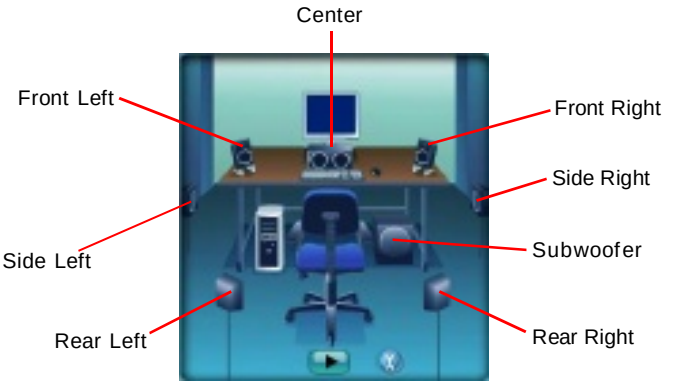
44.1KHz: This is recommend while playing CD.
48KHz: This is recommended while playing DVD or Dolby.
96KHz: This is recommended while playing DVD-Audio.
192KHz: This is recommended while playing High quality Audio.

**Output Source**

Output digital audio source: The digital audio format (such as .wav, .mp3,.midi etc) will come out through S/PDIF-Out.
S/PDIF-in to S/PDIF -out pass though mode: The data from S/PDIF-In can be real-time played from S/PDIF-Out.

### Test Speakers

You can select the speaker by clicking it to test its functionality. The one you select will light up and make testing sound. If any speaker fails to make sound, then check whether the cable is inserted firmly to the connector or replace the bad speakers with good ones. Or you may click the **auto test** button to test the sounds of each speaker automatically.



## Microphone

In this tab you may set the function of the microphone. Select the **Noise Suppression** to remove the possible noise during recording, or select **Acoustic Echo Cancelltion** to cancel the acoustic echo druing recording.

**Acoustic Echo Cancelltion** prevents playback sound from being recorded by microphone together with your sound. For example, you might have chance to use VOIP function through Internet with your friends. The voice of your friend will come out from speakers (playback). However, the voice of your friend might also be recorded into your microphone then go back to your friend through Internet. In that case, your friend will hear his/her own voice again. With AEC(Acoustic Echo Cancellation) enabled at your side, your friend can enjoy the benefit with less echo.

## 3D Audio Demo

In this tab you may adjust your 3D positional audio before playing 3D audio applications like gaming. You may also select different environment to choose the most suitable environment you like.

## Information

In this tab it provides some information about this HD Audio Configuration utility, including Audio Driver Version, DirectX Version, Audio Controller & Audio Codec. You may also select the language of this utility by choosing from the **Language** list.

Also there is a selection **Show icon in system tray**. Switch it on and an icon will show in the system tray. Right-click on the icon and the **Audio Accessories** dialogue box will appear which provides several multimedia features for you to take advantage of.

# Hardware Setup

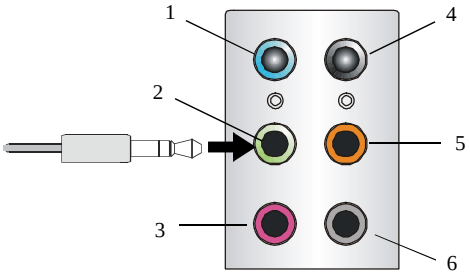
**Connecting the Speakers**

When you have set the Multi-Channel Audio Function mode properly in the software utility, connect your speakers to the correct phone jacks in accordance with the setting in software utility.

**n 2-Channel Mode for Stereo-Speaker Output**

Refer to the following diagram and caption for the function of each phone jack on the back panel when 2-Channel Mode is selected.

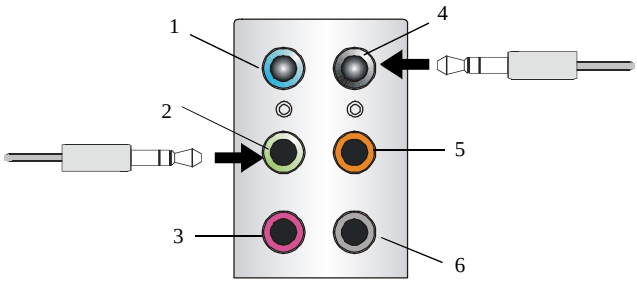
**Back Panel**




1 Line In
2 Line Out *(Front channels)*
3 MIC
4 Line Out *(Rear channels, but no functioning in this mode)*
5 Line Out *(Center and Subwoofer channel, but no functioning in this mode)*
6 Line Out *(Side Surround channels, but no functioning in this mode)*

**n 4-Channel Mode for 4-Speaker Output**

**Back Panel**



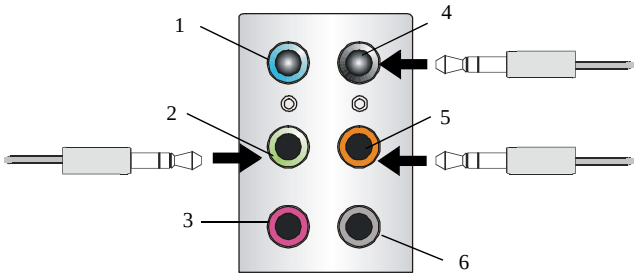

Description:
Connect two speakers to back panel's Line Out connector and two speakers to the real-channel Line Out connector.

**4-Channel Analog Audio Output**

1. Line In
2. Line Out *(Front channels)*
3. MIC
4. Line Out *(Rear channels)*
5. Line Out *(Center and Subwoofer channel, but no functioning in this mode)*
6. Line Out *(Side Surround channels, but no functioning in this mode)*

### n 6-Channel Mode for 6-Speaker Output

**Back Panel**

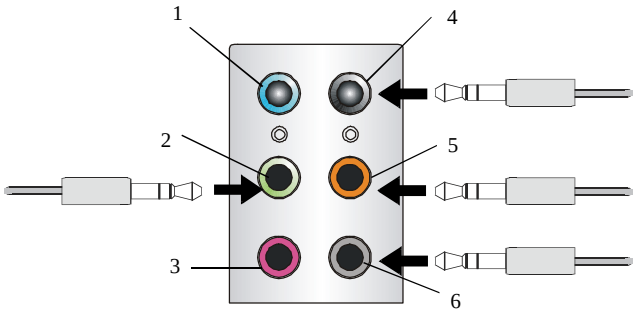



Description:
Connect two speakers to back panel's Line Out connector, two speakers to the rear-channel Line out connector and two speakers to the center/ subwoofer-channel Line Out connector.

**6-Channel Analog Audio Output**

1. Line In
2. Line Out *(Front channels)*
3. MIC
4. Line Out *(Rear channels)*
5. Line Out *(Center and Subwoofer channel)*
6. Line Out *(Side Surround channels, but no functioning in this mode)*

### n 8-Channel Mode for 8-Speaker Output




Description:
Connect two speakers to back panel's Line Out connector, two speakers to the rear-channel Line out connector, two speakers to the center/subwoofer-channel Line Out connector and two speakers to the side-channel Line Out connector.

**8-Channel Analog Audio Output**

1. Line In
2. Line Out *(Front channels)*
3. MIC
4. Line Out *(Rear channels)*
5. Line Out *(Center and Subwoofer channel)*
6. Line Out *(Side Surround channels)*

# Appendix B
# ATi SATA RAID

ATi south bridge SB600 integrate SATA host controller that supports four SATAII ports and RAID function for performance and reliability.
SATA RAID provides support for RAID 0 (Striping), RAID 1 (Mirroring), RAID 0+1 (Striping & Mirroring). RAID 0 greatly improves hard disk I/O performance by concurrently striping data across multiple drives. RAID 1 makes sure data is not lost if a drive fails as data is simultaneously written to two drives. Drives configured for RAID Striping are said to form a RAID 0 set, while drives configured for RAID Mirroring are said to form a RAID 1 set. RAID 0+1 is implemented as a mirrored array whose segments are RAID 0 arrays. RAID 0+1 has same fault tolerance as mirroring and reduces overhead by striping. It needs at least four drives to form a RAID 0+1.

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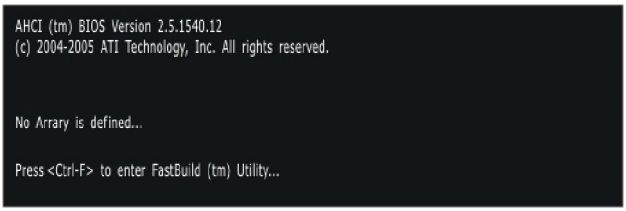
# RAID Configuration

Creating and deleting RAID set and performing other RAID setting up operations are done in the RAID BIOS. During bootup, a screen similar to the one below will appear for about few seconds. Press <Ctrl-F> to enter the FastBuild utility.


AHCI (tm) BIOS Version 2.5.1540.12
(c) 2004-2005 ATI Technology, Inc. All rights reserved.
No Arrary is defined...
Press <Ctrl-F> to enter FastBuild (tm) Utility...

**Important**

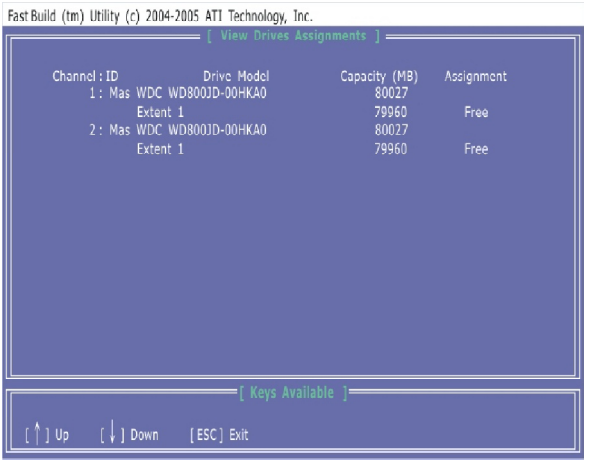
*Be sure to set the **OnChip SATA Type** to "RAID" in BIOS (the path is : **Intergrated Peripherals** => **IDE Devices Configuration => OnChip SATA Type)** before configuting the RAID BIOS.*

The Fast Build Utility menu screen will appear. The Main Menu is used to choose the operation to be performed.

Fast Build (tm) Utility (c) 2004-2005 ATI Technology, Inc.
[ Main Menu ]
View Drive Assignments.....[ 1 ]
Define LD.....[ 2 ]
Delete LD.....[ 3 ]
Controller Configuration.....[ 4 ]
[ Keys Available ]
Press 1..4 to Select Option
[ESC] Exit

### View Drives Assignments

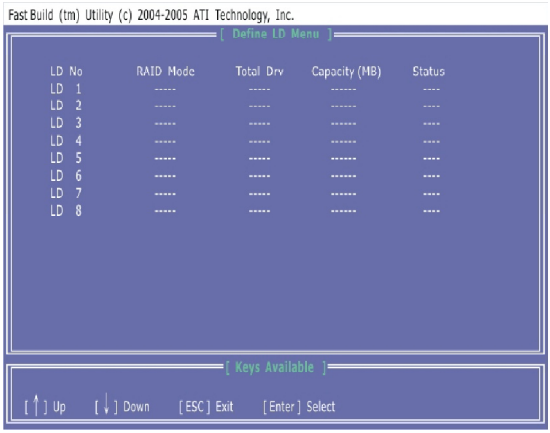
This window displays the model number, capacities and assignment of the drives physically attached to the SATA host adapter.


Fast Build (tm) Utility (c) 2004-2005 ATI Technology, Inc.
[ View Drives Assignments ]
Channel : ID Drive Model Capacity (MB) Assignment
1 : Mas WDC WD800JD-00HKA0 80027
Extent 1 79960 Free
2 : Mas WDC WD800JD-00HKA0 80027
Extent 1 79960 Free
[ Keys Available ]
[ ↑ ] Up [ ↓ ] Down [ESC] Exit

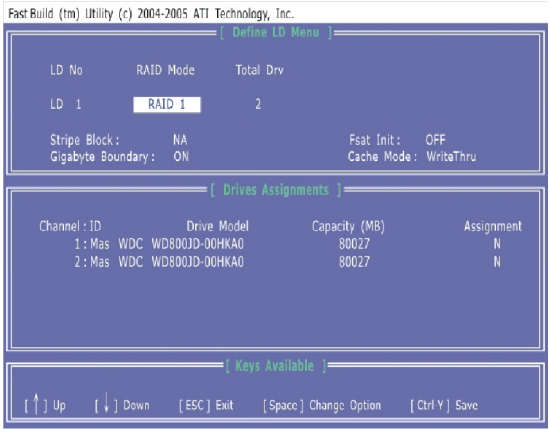
### Define LD (Creating RAID)

The selection of the RAID configuration should be based upon factors including performance, data security, and the number of drives available. It is best to carefully consider the long-term role of the system and plan the data storage strategy. RAID sets can be created either automatically, or to allow the greatest flexibility, manually.

1. Press **2** on the Main Menu screen to enter the Define LD Menu.
2. Press the arrow keys to highlight an logical drive number you want to define and press Enter to select it.

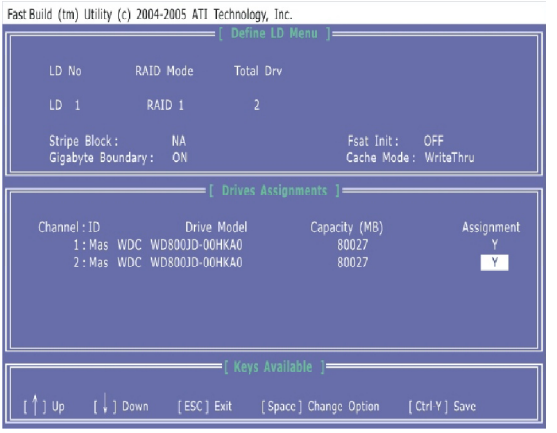

Fast Build (tm) Utility (c) 2004-2005 ATI Technology, Inc.
[ Define LD Menu ]
LD No RAID Mode Total Drv Capacity (MB) Status
LD 1 ----- ----- ------ ----
LD 2 ----- ----- ------ ----
LD 3 ----- ----- ------ ----
LD 4 ----- ----- ------ ----
LD 5 ----- ----- ------ ----
LD 6 ----- ----- ------ ----
LD 7 ----- ----- ------ ----
LD 8 ----- ----- ------ ----
[ Keys Available ]
[↑] Up [↓] Down [ESC] Exit [Enter] Select

3. On the next screen, use the space key to choose a RAID mode (RAID 0/ 1/ 0+1) and use the arrow key to move to the *Drives Assignments* window.
   • Initialize logical drive, zero the disk drives. RAID 1 or 10 only.


Fast Build (tm) Utility (c) 2004-2005 ATI Technology, Inc.
[ Define LD Menu ]
LD No RAID Mode Total Drv
LD 1 RAID 1 2
Stripe Block : NA
Gigabyte Boundary : ON
Fsat Init : OFF
Cache Mode : WriteThru
[ Drives Assignments ]
Channel : ID Drive Model Capacity (MB) Assignment
1 : Mas WDC WD800JD-00HKA0 80027 N
2 : Mas WDC WD800JD-00HKA0 80027 N
[ Keys Available ]
[↑] Up [↓] Down [ESC] Exit [Space] Change Option [Ctrl Y] Save

- Stripe Block Size, the default 64KB is best for most applications. RAID 0 or 10 only.
- Gigabyte Boundary, allows use of slightly smaller replacement drives.
- Cache Mode, WriteThru or WriteBack.

4. On the *Drives Assignments* window, use the arrow key to choose the hard drives which you want to make part of the LD, use the space key to change the assignment to "Y". Then press [Ctrl+Y] to save the configuration.

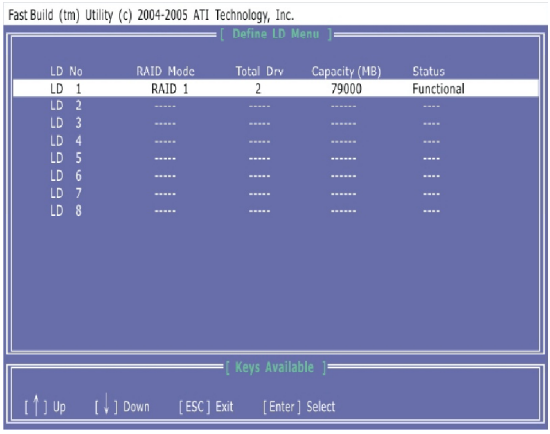



5. A message will show up on the bottom, press any key to save the configuration or press [Ctrl-Y] to allocate the RAID capacity manually.

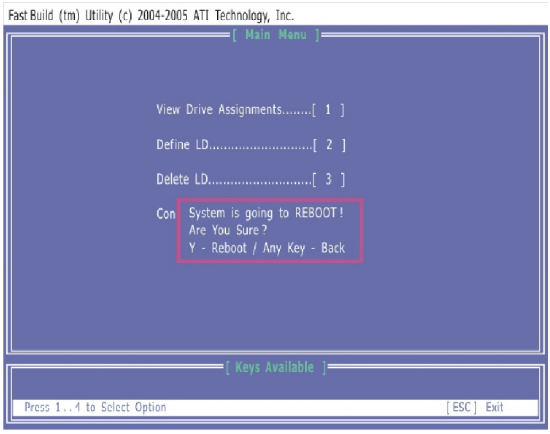
**Important**

*1. The default capacity is the full capacity of the selected hard drives.*
*2. If you allocate the first LD capacity manually, you can create second LD with remaining capacity of the selected hard drives.*

Press ESC key to the main screen.

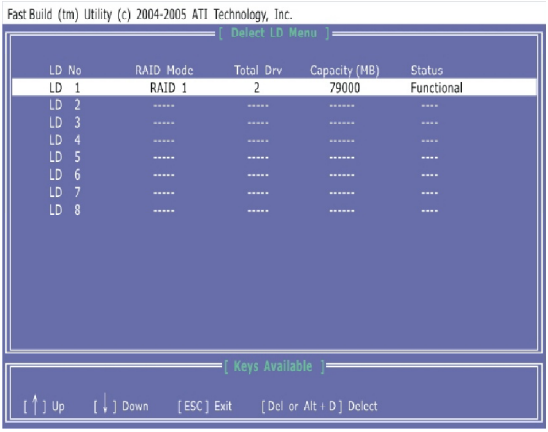

Fast Build (tm) Utility (c) 2004-2005 ATI Technology, Inc.
[ Define LD Menu ]
LD No RAID Mode Total Drv Capacity (MB) Status
LD 1 RAID 1 2 79000 Functional
LD 2 ----- ----- ------ ----
LD 3 ----- ----- ------ ----
LD 4 ----- ----- ------ ----
LD 5 ----- ----- ------ ----
LD 6 ----- ----- ------ ----
LD 7 ----- ----- ------ ----
LD 8 ----- ----- ------ ----
[ Keys Available ]
[↑] Up [↓] Down [ESC] Exit [Enter] Select

7. Press ESC key to exit the utility, a message “System is going to REBOOT! Are You Sure?” will display, answer “Y” to exit it and the system will reboot.

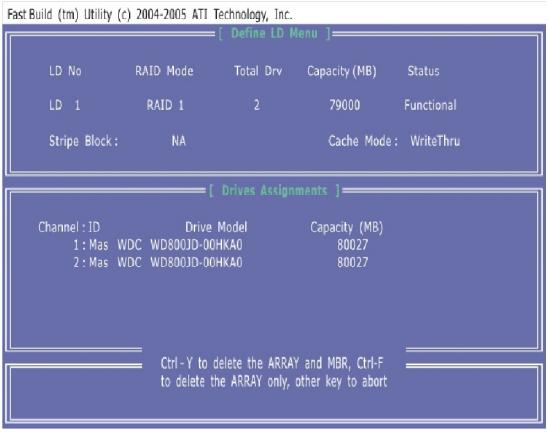

Fast Build (tm) Utility (c) 2004-2005 ATI Technology, Inc.
[ Main Menu ]
View Drive Assignments.....[ 1 ]
Define LD.....[ 2 ]
Delete LD.....[ 3 ]
Con
System is going to REBOOT!
Are You Sure?
Y - Reboot / Any Key - Back
[ Keys Available ]
Press 1..4 to Select Option
[ESC] Exit

**Delete LD (Deleting RAID)**

1. Select “Delete LD” on the main screen.
2. Choose a LD No you want to delete and press “Del” or “Alt+D” delete the RAID set.


Fast Build (tm) Utility (c) 2004-2005 ATI Technology, Inc.
[ Delect LD Menu ]
LD No RAID Mode Total Drv Capacity (MB) Status
LD 1 RAID 1 2 79000 Functional
LD 2 ----- ----- ------- ----
LD 3 ----- ----- ------- ----
LD 4 ----- ----- ------- ----
LD 5 ----- ----- ------- ----
LD 6 ----- ----- ------- ----
LD 7 ----- ----- ------- ----
LD 8 ----- ----- ------- ----
[ Keys Available ]
[ ↑ ] Up [ ↓ ] Down [ESC] Exit [Del or Alt + D] Delect

3. On the next screen, a message will display to inform you, press “Ctrl+Y” to delete the RAID set or other key to abort it. Press “Ctrl+Y” to complete the deletion.


Fast Build (tm) Utility (c) 2004-2005 ATI Technology, Inc.
[ Define LD Menu ]
LD No RAID Mode Total Drv Capacity (MB) Status
LD 1 RAID 1 2 79000 Functional
Stripe Block : NA Cache Mode : WriteThru
[ Drives Assignments ]
Channel : ID Drive Model Capacity (MB)
1 : Mas WDC WD800JD-00HKA0 80027
2 : Mas WDC WD800JD-00HKA0 80027
Ctrl - Y to delete the ARRAY and MBR, Ctrl-F
to delete the ARRAY only, other key to abort

## Installing the RAID Driver (for bootable RAID Array)

1. After you complete the RAID BIOS setup, boot from the Windows CD, and the Windows XP Setup program starts.
2. Press **F6** and wait for the Windows Setup screen to appear.

**Important**

*Please follow the instruction below to make an ATI SATA RAID driver for yourself.*

1. *Insert the MSI CD into the CD-ROM drive.*
2. *Click the "Browse CD" on the Setup screen.*
3. *Copy all the contents in the :*
   *for Windows XP driver CD*
   ***\ATI\ATIDrv\SBDrv\RAID***
   *for Windows Vista driver CD*
   ***\ChipSet\ATI\Packages\Drivers\SBDrv\SB6xx\RAID\x86*** *and* ***\ChipSet\ATI\Packages\Drivers\SBDrv\SB6xx\RAID\x64*** *to a formatted floppy disk.*
4. *The driver disk for ATI SATA RAID controller is done.*

3. Insert the floppy that contains the RAID driver,Press the "S" key to select "Specify Additional Device".
4. For Windows Vista:
   During the Operating system installation, after selecting the location to install Vista click on "Load Driver" button to install a third party SCSI or RAID driver.
5. When prompted, insert the floppy disk or media (Floppy, CD/DVD Or USB) and press Enter.
6. You should be shown a list of available SCSI Adapters.
7. Select **"ATI AHCI Compatible RAID Controller -x86 platform"** when the system is 32-bit version or **"ATI AHCI Compatible RAID Controller -x64 platform"** when the system is 64-bit version and then press ENTER.
8. The next screen should confirm that you have selected the ATI RAID controller. Press ENTER again to continue.
9. You have successfully installed the ATI RAID driver, and Windows setup should continue.
10. Leave the disk in the floppy drive until the system reboots itself. Windows setup will need to copy the files from the floppy again after the RAID volume is formatted, and Windows setup starts copying files.

## Installing the RAID Driver Under Windows (for Non-bootable RAID Array)

1. Insert the MSI CD into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Under the Driver tab, click on ***ATI System Driver***. The ATI System Driver includes ATI RAID Driver.
4. The driver will be automatically installed.

**Important**

***You must install the RAID driver to enable RAID.***